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Founded by HENRY E. SIGERIST

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VOLUME XXX

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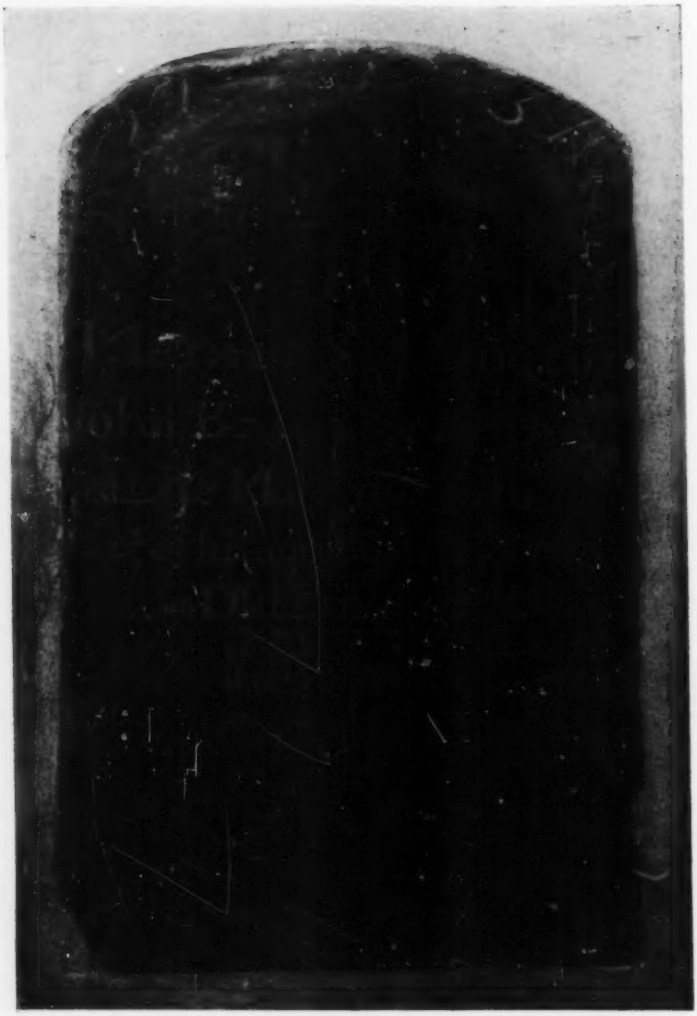

FIG. 1

Gravestone of Dr. John Browne (1667-1737) in St. Michael's Episcopal Church, Trenton, N. J.

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DR. JOHN BROWNE: FRIEND OF BENJAMIN FRANKLIN *

FRED B. ROGERS

Recent interest in the publication of the complete writings of Benjamin Franklin by Yale University has prompted closer evaluation of the life and works of this celebrated eighteenth-century American. Printer and publisher by profession, Franklin achieved world-wide fame as a statesman, scientist, educator and author. The straightforward style and practical value of his writings account for their continued popularity to this day. His personal charm and convivial spirit, moreover, add another facet to his many-sided nature, one which resulted in a friendship with Dr. John Browne, an almost-forgotten physician in colonial New Jersey. Their first meeting, described in Franklin's *Autobiography,* began an acquaintanceship which lasted for fourteen years—from 1723 until Browne's death in 1737. As a result of Franklin's sketch of the doctor's character and from a few facts still available to us, we can reconstruct something of this early physician and his surroundings in colonial America.

On a stone tablet in the wall of the north vestibule of Trenton's historic St. Michael's Episcopal Church, one can read the following inscription (see Fig. 1):

* Presented before the Section on Medical History of the College of Physicians of Philadelphia, 24 February, 1955.—The article is published in commemoration of Franklin's birth, January 17, 1706.—Ed.

1737—In Memory of Doctor John Browne who Departed Life May ye 11th. In the 70th Yer of his age. Born in Northhampton In Old England & Educated IN LONDON.

The Soul and Body which he Wore
To God he Freely did Restore
to Keep it as He did BEFORE.

Just below this epitaph with its odd mixture of capitals and lowercase letters, there appears this legend: "This stone was removed from the family seat on the Banks of the Delaware by his grand-daughter, Lucy Jarvis, and placed here by his great-grand-daughter, Elizabeth Lawrence Highbee, 1825." To further preserve this relic, it was moved from the churchyard into the church itself a century later, in 1924.[1] From its present location the inscription directs us to the past, recalling a scarcely-remembered friendship between two colorful figures in the early years of the eighteenth century.

In his autobiography, Benjamin Franklin, describing his journey to Philadelphia in October, 1723, at the age of seventeen, tells of meeting a Dr. Brown(e) at the latter's home near Burlington, New Jersey.[2] After quarrelling with his brother, James, Franklin had secretly left Boston on an exhausting journey to New York and Philadelphia. He states that inclement weather and no food or sleep for thirty hours caused him much distress during his coastal voyage from New York to Perth Amboy. A fever developed, which he controlled by drinking large amounts of cold water. His enthusiasm was dissipated by the time he reached New Jersey. From Perth Amboy, Franklin tells us:

I proceeded on my journey on foot, having fifty miles to Burlington, where I was told I should find boats that would carry me the rest of the way to Philadelphia.

It rained very hard all the day, I was thoroughly soaked and by noon a good deal tired, so I stopped at a poor inn, where I stayed all night, beginning now to wish that I had never left home. I made so miserable a figure, too, that I found by the questions asked me I was suspected to be some runaway servant, and in danger of being taken up on that suspicion. However, I proceeded the next day, and got in the evening to an inn within eight or ten miles of Burlington, kept by one Dr. Brown.

He entered into conversation with me while I took some refreshment and, finding I had read a little, became very sociable and friendly. *Our acquaintance continu'd as long as he liv'd.* He had been, I imagine, an itinerant doctor, for

[1] De Cou, S. E.: *History of St. Michael's Church, Trenton, N. J., 1705-1925*, Philadelphia, Pa., Holmes Press, 1925, p. 100.

[2] Van Doren, Carl (editor): *Benjamin Franklin's Autobiographical Writings*, New York, The Viking Press, pp. 210, 232.

there was no town in England, or any country in Europe of which he could not give a very particular account. He had some letters and was ingenious, but much of an unbeliever and wickedly undertook some years after to travestie the Bible in doggrel verse, as Cotton had done Virgil. By this means he set many of the facts in a very ridiculous light, and might have hurt weak minds if his work had been published; but it never was. At his house I lay that night and the next morning reached Burlington . . .

Information regarding the personal and professional life of Dr. Browne, aside from the glimpse afforded in Franklin's *Autobiography,* is not readily available today as the physician's activities have been obscured by the passing of more than two centuries. From the facts available, however, we can reconstruct something of the man and his surroundings.

Though New Jersey was one of the early territories settled in the New World, and the first to organize a provincial society of medical men, in 1766, its records are sparsely sprinkled with accounts of the development of its medical profession. Some insight into the status of medicine and everyday life in colonial New Jersey may be obtained, however, by examining newspapers of this period. A voluminous collection of such material is available in *The New Jersey Archives,* an exhaustive and scholarly series of works published by the State of New Jersey under the auspices of the New Jersey Historical Society. These volumes were published in series form from before the turn of the last century until recent years. Several references to Dr. John Browne appear in these *Archives* for the years 1691-1737. These data attest to his being a man of prominence and medical skill in colonial New Jersey.

By the year 1700 the population of New Jersey was between fifteen and twenty thousand. Burlington, Perth Amboy, Newark, Elizabeth, New Brunswick, and a few other towns were somewhat settled, but the colony was essentially a rural area. A doctor, wherever present, was a significant person in his community. The colonial physician, whether well or poorly versed in the medical lore of that time, labored under the handicap of being isolated from the scientific world of his day. What he lost thereby, however, he frequently gained in courage and resourcefulness. In this early period, an era rife with epidemic disease, citizens with some formal medical training, such as Dr. Browne, were valuable indeed.

From his gravestone we learn that John Browne was born in Northampton, England, in 1667 (the year in which Milton's *Paradise Lost* appeared in print). Following education in London, we assume, he travelled on the Continent, perhaps making the grand tour of medical centers in France, Italy, and Holland. Franklin commented on his host's

familiarity with towns in England and other countries of Europe. This is understandable as study at the medical schools at Montpellier, Padua, or Leyden comprised a portion of the well-educated British physician's training in the seventeenth century. Such study, for example, formed part of the medical backgrounds of Thomas Sydenham, William Harvey, and Sir Thomas Browne—three outstanding English medical men of this period.

We do not know where Dr. John Browne took his medical degree, nor the year or exact reason for his emigration to America. From the parody he composed later on the Bible, however, one can suspect that his irregular views on religion probably hastened his departure from Europe. (The doctor-innkeeper's travesty on the Bible, composed in doggerel verse, was facetiously referred to as "his great work" in the outline for Franklin's *Autobiography*). We can only regret that none of Browne's unusual verse has survived to this day, with the possible exception of the few sober lines of his epitaph. His doggerel verses might have contributed a unique item to early Americana, had they been preserved.

The name John Browne first appears in a New Jersey colonial document dated March 4, 1691. This document is a legal release from the provincial proprietor Daniel Coxe and his wife conveying the government of their territorial grant to the West Jersey Society composed of forty-eight landholders.[3] Four years later, in March, 1695, John Browne is listed as a member of the provincial House of Deputies meeting with the Royal Governor Andrew Hamilton at Perth Amboy. Browne's name is also connected to three legislative bills in that month, statutes pertaining to the support of the government, construction of a road to Burlington, and the state of Negroes in the province.[4]

On June 1, 1700, John Browne's signature appears on a lengthy petition protesting disagreeable acts by the proprietors and asking for the appointment of a competent governor by the Crown. (In colonial New Jersey the desire for independence was fostered by constant friction between the Council of Proprietors and the provincial citizens who either questioned the authority of the proprietors or were restive under the exaction of yearly quit-rents by these dignitaries in England. The proprietors were so closely identified wi[illegible]ne Royal Government that as the people became accustomed to resist [illegible]ormer, they found it easy to dispute the right of

[3] N. J. Archives, First Series, vol. 2 (Documents Relating to Colonial History of the State, 1687-1703), p. 327; Newark N. J., 1881.

[4] *Ibid.*, vol. 13 (Journal of Governor and Council, 1682-1714), pp. 228, 232; Trenton, N. J., 1890.

a foreign king to control their affairs). John Browne is subsequently mentioned as receiving ten pounds pay as a "searjant at arms" in the colonial Assembly convened under Governor Robert Hunter in March, 1716.[5]

From 1704 to 1719 the only American newspaper was published in Boston. After the latter date similar journals also appeared in New York City and Philadelphia.[6] In *The American Weekly Mercury* (N. Y.) for August 25–September 1, 1726, there appeared the following notice:

Run away on 29th of August last, from Docter John Browne in York Road, West Jersey, a servant Woman, named Sarah Parler or Sartin, supposed to be Inveigled or Conveyed away by one Richard Sartin, who served his Time at French Creek in Pennsylvania, at the Iron Works, who pretends that he is her Husband, but is not; she is a little, thin Person, having on a Calico gown strip'd with Blue, or a black and white one of Woole and Worstead, a new Bonet, and other tolerable good Cloaths. Whosoever takes up said Servant Woman and secures her to her said Master, shall have Forty Shillings as a Reward and all lawful charge, paid per me—John Brown.

This advertisement for the return of the doctor's runaway servant recalls the colonial paradox of Europeans seeking freedom in America by indenture to pay for their passage across the ocean. Others, of course, had been brought over against their will and sold for a term of years into a modified system of bondage. The curious clothing worn by the runaways and described in numerous similar contemporary newspaper notices indicates the former genteel condition of some of these colonists.

Several newspaper items in Benjamin Franklin's *Pennsylvania Gazette*, advertising farmlands for sale, indicate moderate property holdings by Dr. Browne in the vicinity of Burlington. From February 16-23, 1730, his own residence was offered for sale in *The Pennsylvania Gazette*:

To be SOLD, The Seat or Plantation belonging to Dr. Browne, where he now lives, containing about 230 Acres of very good Land fit for either Wheat, Clover Pasture, or Meadow; well Timbered scituate between the River Delaware and York Road, about nine miles from Burlington, with two convenient Landings, one to the River, and the other up a Creek near the middle of the Land; upwards of Thirty Acres are clear'd, a very convenient House, Barn and Stables with other Outhouses, all in good Repair; and a very good Orchard: There are few Places which exceed it, both for Pleasure and Profit. Any person that hath a mind to buy, may apply to the said Dr. Browne before the 30th Day of March next, or on

[5] *Ibid.*, vol. 14 (Journal of Governor and Council, 1715-1738), p. 68; Trenton, N. J., 1890.

[6] *Ibid.*, vol. 11 (Newspaper Extracts, 1704-1739), pp. 109, 166-167, 194, 214, 236, 237, 499; Paterson, N. J., 1894.

the said Day it will be sold by Vendue to the highest Bidder, at Mr. Micajah How's, 9 Miles from Burlington, where said Dr. Browne formerly liv'd.

One can surmise that the doctor, then an elderly man, lived in retirement following the sale of his "plantation." This sale may have been prompted by illness or infirmity for the following notice appeared in *The Pennsylvania Gazette* for May 12-19, 1737:

We hear from Burlington County that on the 11 Inst. died there of a Stoppage in his Urine, Dr. John Browne, a Gentleman of singular Skill in the Profession of Surgery, which he practiced in those Parts many Years with great Success, and was well esteemed by all that knew him.

This simple obituary may have been written by Benjamin Franklin, who was then editor of *The Pennsylvania Gazette*. Franklin had known the colorful and erudite doctor for fourteen years by that time, since their first meeting which Franklin never forgot. The disheartened young man's spirits were raised considerably by the wit and discernment of this pioneer physician of the Delaware Valley. Franklin's brief anecdote describing his encounter with Dr. Browne forms a small, but significant detail in the unsurpassed story of how a humble printer's apprentice came to Philadelphia and rose to be one of the world's great figures, and "the most complete representative of his century that any nation can point to."

A STRIVING FOR SCIENTIFIC RESPECTABILITY: SOME AMERICAN BOTANICS AND THE NINETEENTH-CENTURY PLANT MATERIA MEDICA *

ALEX BERMAN

When the botanico-medical movement of the nineteenth century is examined against the background of the growth and utilization of the plant materia medica in this country, several paradoxes immediately present themselves. To begin with, Botanics sought to attract popular patronage by stressing the superiority of indigenous plant remedies as opposed to the "mineral" and heroic medication of the regulars, at a time when the regulars numbered within their ranks some of the most zealous and productive investigators of indigenous plant drugs. Moreover, the regular medical profession in the United States already possessed an impressive plant materia medica when the Botanics appeared on the scene, early in the nineteenth century. Finally, the regulars had an overwhelming superiority of output in scientific medical botany in comparison with the Botanic practitioners.

To the unsuspecting novice, much of the literature of the botanico-medical movement may seem to be concerned predominantly with medical and scientific botany. The casual reader, suddenly confronted, for example, with Samuel Robinson's *A Course of Fifteen Lectures on Medical Botany* (1829 and later editions) would expect its contents to correspond to the title. Instead, he would discover an impassioned eulogy on the Thomsonian system of medicine interpersed with frequent references to the Deity, poetical effusions, and quotations from the classics. Many of the journals of the movement, while bearing the title "Botanic," had little to do with that subject; similarly, Thomson and others who styled themselves "botanists" were in reality only herb doctors.[1]

* The activities of American Botanic practitioners were investigated by this writer in a doctoral dissertation entitled "The impact of the nineteenth century botanical-medical movement on American pharmacy and medicine" (University of Wisconsin, 1954). Portions of the third chapter of this dissertation form the basis of the present article. This study was supported in part by the Research Committee of the Graduate School from funds supplied by the Wisconsin Alumni Research Foundation. The writer is indebted to Dr. George Urdang, Professor Emeritus of History of Pharmacy, for his comments and suggestions.

[1] ". . . not infrequently," writes E. D. Merrill, "one finds runs of these magazines in

As early as 1789, Benjamin Rush strongly urged his students at the University of Pennsylvania to study the indigenous plants of the United States for their possible curative properties:

> Let me recommend to your particular attention, the indigenous medicines of our country. Cultivate or prepare as many of them as possible, and endeavour to enlarge the materia medica, by exploring the untrodden fields and forests of the United States . . . the Seneka and Virginia snake-roots, the Carolina pink-root, the spice-wood, the sassafras, the butter-nut, the thoroughwort, the poke, and the stramonium are but a small part of the medicinal productions of America. I have no doubt but there are many hundred other plants which now exhale medicinal virtues . . . Who knows but it may be reserved for America to furnish the world, from her productions, with cures from some of those diseases which now elude the power of medicine? Who knows but that, at the foot of the Allegany mountain, there blooms a flower, that is an infallible cure for the epilepsy? Perhaps on the Monongahela, or the Potowmac, there may grow a root that shall supply, by its tonic powers, the invigorating effects of the savage or military life in the cure of consumptions.[2]

George B. Wood, who was not backward when it came to wielding a lancet or applying a blister, pointed out to his students that the United States was rich in indigenous plant drugs and singled out some thirty-six for special mention.[3] Many prominent regular physicians who employed the prevailing heroic methods of treatment were nevertheless keenly interested in scientifically developing an indigenous plant materia medica.

By and large, Botanic medical literature was produced on two levels: a literature intended for lay consumption and suited to the needs of uneducated practitioners; and a literature largely designed to attract educated readers, provide reference works for more ambitious students and practitioners, and in general obtain scientific recognition. It was these latter

botanical libraries, because trusting and not too well-informed librarians and even directors of botanical institutions have been beguiled into purchasing such sets from the titles" (*Proc. Amer. Philosophical Soc.*, *86*:80, 1942).

But some Botanic practitioners did try to produce a serious and scientific body of literature dealing with plant medicinals. Such an attempt was made by a number of prominent Botanics, e. g., Elisha Smith, Wooster Beach, John Kost, Morris Mattson, Horton Howard, John Thomson, John King, and William H. Cook, whose work will be discussed in the succeeding pages.

[2] Rush, Benjamin: "Observations on the Duties of a Physican, and the Methods of Improving Medicine. Accommodated to the Present State of Society and Manners in the United States," in *Medical Inquiries and Observations*, Philadelphia, 1805, 2nd ed., I, 406-407.

[3] Wood, Geo. B.: "Introductory Lecture to the Course of Materia Medica in the University of Pennsylvania Delivered Nov. 3, 1840," *Amer. Journ. Pharm.*, n. s. *6*:298-322, 1841.

groups—the Neo-Thomsonians, Eclectics, and independent Botanics with scientific pretensions—who made a strong, conscious effort [4] to synthesize the work of their less educated colleagues, to influence the growth of the plant materia medica, and to subject their plant medicinals to scientific verification. It is at this significant level of Botanic output that the contributions of certain leading Botanic practitioners will be reviewed.

Elisha Smith and the First Botanic Synthesis

The earliest noteworthy attempt in this direction was the treatise published by Elisha Smith,[5] an independent [6] Botanic physician of New York. His book of 624 pages appeared in 1830, and was entitled: *The Botanic Physician: Being a Compendium of the Practice of Physic upon Botanical Principles;* etc. In the preface to his work, Smith voiced the aspirations of the few more enlightened Botanics of the time His introductory remarks constituted in fact a manifesto which presaged the more ambitious Neo-Thomsonian and Eclectic productions to come. Thus Smith wrote:

> The author of the following work has long seen, and with regret, the want of something like a general, systematic treatise upon the different branches appertaining to medicine, on a plan adapted to the peculiar profession of Botanic physicians, and he has looked anxiously for some one, more competent to the task, to undertake it. But as yet, no work of the nature of the one proposed, even professedly, has appeared, that I am aware of . . .
>
> It will not be denied, that the depressed and almost outlawed condition under which Botanic Practitioners have labored in modern times, is in great measure owing to the deficiency of a substantial, comprehensive and regular system of practice which should render them *independent* of any other sect, elevate them

---

[4] One Thomsonian, A. R. Porter, co-editor of the *Boston Thomsonian Medical Journal*, suddenly realizing that a scientific approach to the plant materia medica was desirable, informed his readers that ". . . those who know nothing of botany may mistake a poisonous plant for an innocent one . . . We have but little knowledge of the science of botany; we know but very few of the plants which grow in nature's extensive garden. We intend, however, to make ourself acquainted with more of them, and shall ere long go on a botanizing expedition, with as good a botanist as New England affords, and in a future number shall give our readers some of the results of our investigation" (*Boston Thomsonian Medical Journal*, *1*:30, 1845).

[5] Not to be confused with Elias Smith (1769-1846), the clergyman and early co-worker of Samuel Thomson. Only the barest facts are known about the life of Elisha Smith, who for a time functioned as the President of the New York Association of Botanic Physicians. Wilder mentions Smith's death as occurring a few months after the publication of his work in 1830 (Wilder, A.: *History of Medicine*, p. 445).

[6] The term, "independent Botanic" is used in this study to indicate highly individualistic practitioners who were not affiliated with Thomsonian or Eclectic groups.

to a standard of respectability, and remove all ground for the imputation of ignorance and incompetency which are now so lavishly heaped upon them . . . Until such a standard is established, societies formed, and the Botanic Profession *brought up to that standard*, public confidence in them . . . cannot be expected.[7]

Smith was one of the most forthright of all Botanic writers. He readily admitted that his ideas about causes, symptoms, and description of diseases were lifted from the works of others. "I lay no claim to originality," he wrote, and acknowledged his indebtedness particularly to "the estimable Buchan and Thomas."[7a] His section on materia medica was strongly influenced by the work of James Thacher, C. S. Rafinesque, and Samuel Henry's *A New and Complete Family Herbal* (New York, 1814).[8] Smith was of the opinion that these works had "contributed largely to the development of the medicinal resources of our country."[9] Apparently, Rafinesque's scathing criticism of Henry's *Herbal* as an inept piece of work did not lower it in Smith's estimation.[10]

About one-fifth of Smith's book was devoted to plant medicinals. Almost 300 plants were described, their common names followed by scientific binomial nomenclature. Habitat, properties, and uses were given in each case. The section ended with a brief essay on the technique of collecting and preserving plant drugs. The work contained no plant illustrations.

[7] Smith, Elisha: *The Botanic Physician*, pp. iii-iv. It is interesting to note that three years later, when Wooster Beach published the first edition of his influential *American Practice of Medicine*, he quoted Smith's manifesto, without however having the common courtesy to mention Smith by name. Beach merely referred to Smith's declarations as "remarks of an author." See Beach, W.: *The American Practice of Medicine*, 1833, v. 1, p. 9.

[7a] *Ibid.*, p. v. The authorities referred to were two Englishman: William Buchan, author of the *Domestic Medicine or Family Physician* (1769 and other editions), and Robert Thomas, whose *Treatise on Domestic Medicine* first appeared in this country in a revised edition by David Hosack, in 1822.

[8] Henry's work contained a description of some 160 indigenous plants, with crude black and white illustrations. Only the common names of plant medicinals were given. There was no attempt at botanical taxonomy, despite the fact that the author styled himself a "botanist." According to Henry, he was "one of the members of the late College of Physicians and Surgeons and of the Medical Society of the city and county of New-York." The work, in the author's words, was ". . . the result of more than thirty years . . . practice" and "while a prisoner, towards the close of the last war [War of 1812] among the Creek Indians: and his travels through the Southern States, whilst making botanic discoveries on the real medicinal virtues of our indigenous plants, wherein he has made known all his new discoveries . . . in the cure of most diseases incident to the human body. Adapted for the benefit of Masters and Mistresses of families, and for the community at large, of our United, Free, and Independent States of America."

[9] *Ibid.*, p. V.

[10] See the introduction to the first volume of Rafinesque's *Medical Flora* (1828).

Many of Smith's views undoubtedly shocked the orthodox Thomsonians of his day. Although an ardent Botanic, he was nevertheless not averse at times to bleeding his patients in moderation,[11] or prescribing "vegetable poisons" and cathartics.[12] He used "mineral medication" sparingly, and occasionally cantharides plaster and the seton.[13] Mercurial preparations were of course strongly denounced by him. A striking feature of his practice was his employment of major surgery, an unusual approach among early Botanics.[14]

Despite its obvious shortcomings and unoriginality, Smith's *Botanic Physician* was the first significant attempt to synthesize and systematize the prevailing Botanic Practice and plant materia medica.

Horton Howard, the "Improved Botanic"

Two years after the appearance of Smith's work, Horton Howard of Columbus, Ohio, published his two-volume treatise, *An Improved System of Botanic Medicine* (1832).[15] Howard, a former agent for Samuel Thomson, had become involved in a heated controversy with his employer, and had proceeded to set up a Botanic faction of his own. The author's section on plant materia medica took up 85 pages in the second volume, and was entitled "New Vegetable Materia Medica." What Howard had done was to augment the seventy plant drugs comprising Samuel Thomson's materia medica with forty-two more, making a total of 112 plants. The nature of Howard's compilation can be seen from his own statements:

> In this as well as in the preceding part of the present volume, we have drawn our descriptions, and all other important information, from every accessible source, and hope we shall be pardoned throughout, for crediting but few quotations or authorities which we thought proper to use. The works principally consulted are,

[11] "Bleeding may be useful in some cases," wrote Smith, "but the extent to which it is generally carried appears to me to be an extravagant waste of the fountain of life" (p. VII). In his treatment of mental disease, however, Smith abandoned all restraint: ". . . bleeding should be often repeated, for no persons can bear the loss of blood so well as maniacs, nor is there any case in which it is so necessary to draw it off, and so many times" (p. 194).

[12] E. g., opium, stramonium, digitalis, rhubarb, etc.—drugs which were denounced by orthodox Thomsonians.

[13] E. g., in his treatment of "inflammation of the liver" (p. 219).

[14] "Principally condensed from the works of Benjamin Bell" (pp. 84-149).

[15] The full title reads: *An Improved System of Botanic Medicine Founded Upon Correct Physiological Principles; Embracing a Concise View of Anatomy and Physiology; Together with an Illustration of the New Theory of Medicine. To Which is Added a Treatise on Female Complaints, Midwifery, and the Diseases of Children*, 2 volumes, Columbus, Ohio, 1832.

Thomson, Rafinesque, Rogers[?] Thacher, Bigelow, Barton, Cullen, and Smith [Elisha].[16]

According to Howard, the purpose in writing this treatise was to correct the "imperfections of Dr. Thomson's book, and the circumscribed limits of his materia medica." "I was not satisfied," he announced, "that the knowledge of botanic medicine should remain in so imperfect a state." [17]

Most of the plant medicinals in this work were arranged by scientific binomial names, followed by common names, description, habitat, and medical use. Twenty-two black and white illustrations, rather poorly done, were included. By and large, this work was no improvement on Smith's treatise, and in many ways actually inferior.

In 1833, the editor of the *Eclectic and Medical Botanist*,[18] mouthpiece for the Howard faction, denied charges of plagiarism levelled against Howard for lifting material from Henry's *Herbal*. "Some of the plates," retorted the editor, "were copies from nature, others from the standard works of Barton, Bigelow and Rafinesque." [19]

Howard's vaunted "Cholera Syrup" proved ineffective when the disease reached Columbus. Both Howard and his chief lieutenant, Harvey D. Little, succumbed in 1833, their demise virtually ending the short-lived "Improved Botanic" faction. Nevertheless, Howard's treatise continued to enjoy posthumous popularity in certain Botanic circles, appearing in several editions, and indeed dazzling many a Botanic with facile quotations from Wistar's *Anatomy*, Magendie's *Physiology*, Blane's *Medical Logic* and Samuel Robinson's *Medical Botany*.

Wooster Beach, the "Eclectic"

In 1833, Wooster Beach published his three-volume work, *The American Practice of Medicine*.[20] Its debut was accompanied by a fanfare

[16] Howard, H.: *Improved System of Botanic Medicine*, v. II, 1832, p. 281.

[17] *Ibid.*, "Preface," v. 1.

[18] Published twice a month, *The Eclectic, and Medical Botanist; Devoted Principally to Improvements in the Botanic Practice of Medicine*, Columbus, Ohio, (1832-1834?), was one of the many ephemeral journals of the Botanic movement and was the organ of the abortive "Improved Botanic" faction. The term "Eclectic" in the title of the periodical antedates by a number of years the similar appellation taken on subsequently by the "Beachites."

[19] *Ibid.*, p. 56.

[20] The full title is *The American Practice of Medicine; Being a Treatise on the Character, Causes, Symptoms, Morbid Appearances and Treatment of the Diseases of Men, Women, and Children of all Climates on Vegetable or Botanical Principles: As Taught*

and publicity campaign unparalleled in the history of Botanic literature. Sample copies were distributed to royalty abroad as well as to numerous influential Americans. The resulting deluge of medals and testimonials was subsequently skillfully exploited to promote a large sale of this work.[21]

The introduction to *The American Practice of Medicine* contained, among other things, a verbatim statement of Smith's manifesto, without, as has been previously indicated, directly crediting Smith. Included also were lengthy quotations from Rafinesque's introductory remarks to his *Medical Flora,* embellished with approving comments by Beach. The section on materia medica included in the third volume was supplemented by superficial essays on botany, chemistry, and natural history. As in Howard's book, illustrations of plants in green ink, rather crudely done, were copies for the most part from Rafinesque, W. P. C. Barton, and Jacob Bigelow.[22]

By 1896, *The American Practice Condensed, or The Family Physician,* 56th ed. [sic!][23] had listed some 134 plant medicinals, 116 of which were stated to have been used frequently in Eclectic practice, the remainder being grouped under a heading entitled "Botanical Synopsis of Plants Occasionally Used, and Recommended for Further Investigation."[24] Taxonomy of plants was more elaborately treated by Beach than by Smith and Howard. Not only were genera and species given, but class and order as well. Beach's materia medica, while chiefly confined to plant drugs, also listed a number of chemicals. Generally speaking, one is forced to conclude, after reviewing Beach's work on the plant materia medica, that his contribution was noteworthy mainly for its mediocrity and excessive borrowing.

at the Reformed Medical Colleges in the United States: Containing Also a Treatise on Materia Medica and Pharmacy, or the Various Articles Prescribed, Their Description, History, Properties, Preparation, and Uses; with an Appendix on the Cholera, etc., New York, 1833.

[21] Later this three-volume treatise was condensed and published as *The Family Physician.* It enjoyed a large sale, and was published in many editions.

[22] According to Beach, "Many of the plants have been drawn from nature, and a number from the excellent work of Professor Rafinesque, called the *Medical Flora.* Others have been reduced from Barton, Bigelow, &c. The foreign ones have been principally taken from the *British Flora,* and Thornton's *Family Herbal* . . ." (*The American Practice of Medicine,* vol. I, p. 19).

[23] Many of the "editions" were actually reprints. This was also true of a large number of the "editions" of other Botanic practitioners.

[24] Beach, *op. cit.*, "56th ed." p. 769 ff.

Morris Mattson and "My Son John"

A perceptible stir was created in Botanic circles in 1841 with the publication of two pretentious Botanic works. The first, by Morris Mattson, entitled *The American Vegetable Practice*[25] was followed immediately by John Thomson's *The Thomsonian Materia Medica or Botanic Family Physician.*[26]

Mattson, who for a time had served as editor of the *Boston Thomsonian Manual and Lady's Companion,* had been hired by Samuel Thomson in the late 1830's to help with the revision of a new edition of his *Guide to Health.* This relationship, like many previous ones into which Thomson had entered, soon degenerated into a violent feud, and to the consternation of Thomson, Mattson presented to the world his large tome interspersed with uncomplimentary remarks about the founder of the Thomsonian system.

About 180 pages in *The American Vegetable Practice* devoted to the discussion of plant materia medica were supplemented by 26 attractive colored illustrations of plants. In all, some 86 plant medicinals were mentioned in monographs which listed common names, botanical names, habitat, history, properties, medical uses, parts used, and time for collecting. Preceding the section on plant materia medica were two very brief essays, one on "Proximate Vegetable Principles," which displayed the author's ignorance of chemistry, and another entitled "Instructions on Collecting, Drying, and Preserving Plants."

Mattson's work was unquestionably a great advance over Thomson's *Guide to Health.* It was a far more literate production than any of the preceding works discussed, and there were unmistakable signs that Mattson had made a great effort to read extensively and with discrimination. "In preparing *The American Practice* for the press," he wrote, "I have availed myself of the usual authorities, where they could be of any

[25] Full title: *The American Vegetable Practice, or A New and Improved Guide to Health Designed for the Use of Families. In Six Parts. Part I. Concise View of the Human Body with Engraved and Wood-Cut Illustrations. Part II. Glance at the Old School Practice of Physic. Part III. Vegetable Materia Medica with Colored Illustrations. Part IV. Compounds. Part V. Practice of Medicine, Based upon What Are Deemed Correct Physiological and Pathological Principles. Part VI. Guide for Women, Containing a Simplified Treatise on Childbirth, with a Description of the Diseases Peculiar to Females and Infants,* Boston, 1841. A second "edition" of this work appeared in 1845.

[26] Published under the name of Samuel Thomson, the book was actually written by his son, John Thomson. The two "editions" (12th and 13th) printed in Albany in 1841 were identical.

service." [27] Of original investigation and scientific acumen, however, there were no indications.

Only the importunate behavior of his son, John, and the consuming hatred which Samuel Thomson bore Mattson could have induced the aging Thomson to permit the use of his name on the title page of *The Thomsonian Materia Medica*. The appearance of this book, with its scientific pretensions, evoked hoots of derision and glee from Botanic practitioners who were tired of hearing old Thomson's denunciation of education and "mongrel improvements." Thomas Cooke, editor of the independent journal, *The Botanic Medical Reformer and Home Physician*, greeted the new book with a scathing editorial:

> John Thomson (*" or my son John "*) of Albany and the " old patriarch," Samuel Thomson of Boston, got up a work in a great hurry, with a view to compete with Dr. Mattson's work, and to help swell out its pages, they copied nearly the whole of a work on Anatomy, (by an English author) a science by the way that " the old patriarch " has time and again denounced as ***humbug***, and forwarded a copy to a " Dutch king " to see whether he liked it. As a mark of common courtesy, the " enlightened Prussian king," Frederick William, sent " my son John " a letter acknowledging the receipt of said " *Anatomical* Vegetable Materia Medica!! " The ***king*** handed it over to the faculty to *dissect*, and there is little doubt but that they will give it its deserts. Did the *American* President receive a copy? . . . Let " my son John " read Dr. B.'s letters [28] . . . But we had like to have forgotten that these are the days of " Improvements." [29]

John Thomson dedicated his 834-page tome to Benjamin Waterhouse, M. D., and made a determined bid for scientific recognition. The author announced that he was assisted in his work " upon animal and vegetable life " by consulting such authorities as Hippocrates, Galen, Bacon, Boerhaave, Sylvius, Cullen, Brown, Hunter, Goldsmith, Robinson, Eaton, Tully, Barton, Rush, and above all, Samuel Thomson. The reader was regaled with essays on the history of botany, plant physiology, plant anatomy and morphology. An outline of " Linnaeus's System of Vegetables " was succeeded by biographical sketches of Linnaeus, Conrad Gessner, Tournefort, and Mark Catesby. Not content with this show of erudition, John Thomson included an essay on botanical gardens and a 14-page glossary of botanical terms. All this, however, was merely a prelude of things to come. There now followed a 41-page treatise on matter, water, caloric, light, and air, in which the works of Cavendish,

[27] Mattson, *op. cit.*, p. XI.

[28] The reference is to Wooster Beach's testimonials.

[29] *The Botanic Medical Reformer and Home Physician*, vol. II, p. 211, Philadelphia, 1842.

Priestley, Lavoisier, Davy, and Dalton were reviewed. Almost 300 pages were next devoted to "Human Anatomy with Plates," followed by 83 pages dealing with the "History of the Efforts of Dr. Samuel Thomson to Sustain His System of Vitality in Matter." The author was now ready for his "Description of the Vegetable Substances Used by Samuel Thomson." It should be noted, however, that a number of the substances so described were not used by Samuel Thomson, since the original core of Thomson's seventy plant drugs had been increased by "my son John" to one hundred and one. The additions included, among other things, cathartics which the father had vehemently denounced and which John justified on the following grounds:

> We have selected from the vegetable kingdom, some of the most soothing and mild cathartics, to be used by those who will, if they cannot obtain a gentle dose of physic from a Thomsonian, go to the "regular physician," and blindly take *calomel, croton oil, gamboge*, and the most deadly drugs that are to be found in the shops; by which means many times lives are lost, for the want of the knowledge of a simple dose of *peach leaf tea, bitter root, senna* or *castor oil*. The Thomsonian, if he wishes to keep his patients, and be enabled to save them, must, if it be necessary, respect those little prejudices to which the mind of every individual is more or less subject; and which, like religious, political, or any other preconceived opinions, must be reasoned rather than forced out of them.
>
> It is, therefore, to protect the lives and health of the unsuspecting, that the subject of physic is agitated at this time and place.[80]

The section on plant medicinals followed the general pattern established by the works of the preceding Botanic authors. Monographs on the individual plant drugs gave common and botanical names, properties, and uses in the Thomsonian practice. Again, as in Mattson's work, attractive illustrations of plants in color were included. The *Thomsonian Materia Medica* was in all respects a worthy competitor for the *American Vegetable Practice*.

All this must have been a severe blow to the "old patriarch" who had steadfastly maintained an honest contempt for education and science, only to see his probity impugned by the ambitious undertaking of his son. The elder Thomson's feelings were perhaps partly mollified by a public statement published at the end of the book, announcing that Dr. Samuel Thomson had disclaimed all responsibility for a number of therapeutic agents recommended by his son.

[80] *The Thomsonian Materia Medica*, 12th and 13th editions, 1841, pp. 654-55.

Procter's Critique of Kost and King

We are indebted to William Procter, Jr., (1817-1874) for a penetrating and objective appraisal of the work of John Kost, a leading Neo-Thomsonian practitioner, and of John King, one of the most prominent exponents of Eclecticism. Procter's reviews of Kost's *Elements of Materia Medica and Therapeutics* . . . 1858,[21] and King's *American Eclectic Dispensatory*, (1854 and 1859 "editions")[22] constitute not only a valuable critique of Botanicism and Eclecticism as seen through the eyes of one of the most distinguished pharmacists of the time, but are also among the very few dispassionate critical analyses of Botanicism to appear in nineteenth century literature. Not being a physician, Procter carefully refrained from passing judgment on the medical and clinical pretensions of Eclecticism, confining his critical analysis to fields in which he was eminently competent to speak, namely, pharmacy, chemistry, and materia medica.

In 1849, John Kost had published the first edition of his *Elements of Materia Medica and Therapeutics*. This treatise was intended to be used in the "new physiological system of practice," an elegant and euphemistic phrase coined by Neo-Thomsonian practitioners to describe the new Thomsonian methods and to forestall such uncouth epithets as "steamers" and "puke doctors" which were constantly being hurled at them by their enemies. The author, who announced himself on the title page as an honorary member of the Thomsonian Medical Society of New York, had taught materia medica, botany, and therapeutics at a number of Neo-Thomsonian medical schools. A new and revised edition of Kost's work appeared in 1858, and it was this edition that was reviewed by William Procter in the *American Journal of Pharmacy*.

The new and enlarged volume of 829 pages was still called *Elements of Materia Medica and Therapeutics*, but the descriptive phrase, "Adapted to the New Physiological System of Practice" which appeared on the title page of the first edition had been significantly changed to "Adapted to the American Reformed and Eclectic Practice." Reluctant to lose his followers among the Neo-Thomsonians, but at the same time eager for a large sale of his book to the Eclectics, Kost for many years managed to maintain a delicate balance, poised between the two hostile camps, and maneuvering with singular adroitness. This would account for Procter's

[21] *Amer. Journ. Pharm., 30*: (3rd series, v. 6) 186-189, 1858.

[22] *Amer. Journ. Pharm., 26*: (3rd series, v. 2) 569-575, 1854 and *31*: (3rd series, v. 7) 285-287; 384-391, 1859.

impression that Kost's treatise was a product of the Eclectic school,[83] despite strong evidences to the contrary, some of which Procter himself recognized in his review.[84]

Some of Procter's conclusions were forcefully stated: "We look in vain," he wrote, "for evidences of that laborious research which has ransacked the primary depositions of scientific knowledge."[85] He pointed out that Kost had "been careful to keep beyond the reach of the law of copyright in making copious quotations from Royle and Pereira, which are interspersed through his pages, like patches of silk on garments of cotton."[86] As a pharmacist, Procter was free from the emotional block which regular physicians evinced when confronted with Botanic literature. "There are many things in the volume of Dr. Kost which merit the attention of the regular physician,"[87] Procter observed, and in a significant passage went on to state:

> Practice and experience have materially modified the standing and quality of the body called Eclectics; much they have gained by observation, much from hearsay from inferior sources, of the use and qualities of many indigenous plants, unknown or slightly understood by regular practitioners. These they are verifying by trial, and undoubtedly are developing many valuable facts. The contracted therapeutics of Thompsonianism, and its limited materia medica, are disappearing in the voluminous admixture of regular medicine, and new discoveries in the literature of Eclecticism, and in a few years it will be difficult to detect the stern features of the doctrine of its founder. We believe that the activity of lobelia has been over-rated in regular treatises, owing to the prejudice which clings to its early history . . . its valuable qualities afford good ground for the belief that the medical profession would do well to give it more attention than they have hitherto accorded.[88]

Finally, Procter pointed out certain plant drugs which the Eclectics were using as meriting attention, namely podophyllum, leptandra, sangui-

[83] In 1859, Kost's treatise was actually approved for study at the Eclectic Medical Institute in Cincinnati (Felter, H. W.: *History of the Eclectic Medical Institute*, Cincinnati, 1902, p. 46).

[84] Procter correctly pointed out that Kost "is evidently a disciple of Thompson when he treats of lobelia and capsicum, and in his repudiation of the very word narcotic; yet unlike that noted individual, he is a strong advocate for cathartics and anodynes . . ." (*Amer. Journ. Pharm.*, *30*:187). This was an approach taken by many Neo-Thomsonians.

[85] *Amer. Journ. Pharm.*, *30*:187.

[86] *Ibid.*, p. 187.

[87] *Ibid.*, p. 189.

[88] *Ibid.*, p. 189. It is interesting to note that Procter's "Inaugural Essay" was on Lobelia inflata. (*Amer. Journ. Pharm.*, *9*:98-108, 1837). Five years later, Procter published an outstanding paper on the pharmaceutical preparations of lobelia (*Amer. Journ. Pharm.*, *14*:108, 1842).

naria, caulophyllum, cypripedium, " and some other plants, which to some extent have been tried by physicians, and in some instances highly approved." [39]

John King (1813-1893) was unquestionably one of the most important spokesmen for Eclecticism. His 1854 edition of the *American Eclectic Dispensatory* (1391 pages), and the 1859 version, the *American Dispensatory* (1475 pages), were reviewed at length by William Procter in the pages of the *American Journal of Pharmacy*. Procter prefaced his critical analysis of King's 1854 edition by remarking that the rise of Eclecticism in this country with its medical schools, societies and " a materia medica, to a large extent botanical and indigenous, . . . is certainly a phenomenon in medical history of the United States of no ordinary interest." [40] Briefly sketching the rise of Thomsonian and Eclectic medicine, Procter concluded that this development " may be esteemed a remarkable episode in the history of American medicine and pharmacy." [41]

A number of observations made by Procter applied not only to King's work, but to that of other Botanics and Eclectics as well. Thus the laudable objective of investigating indigenous plants for curative purposes could not be realized as long as Botanic practitioners were not scientifically trained in this direction. Moreover, mere appropriation and compilation of facts established through investigation by non-Botanics could not be substituted for original research on the plant materia medica. Finally, the Botanic practitioners as a group evinced a marked disinclination and lack of ability to conduct phytochemical work. This last point is particularly important in connection with the subsequent evolution of Eclectic pharmacy. Procter forcefully indicated that the Eclectics had long evaded the responsibility for the chemical examination of their plant medicinals, many of which had been subjected to proximate analyses at the Philadelphia College of Pharmacy. Instead, the Eclectics were instrumental in promoting a large-scale manufacture of " Eclectic medicines " derived from plants, consisting of heterogeneous and ill-defined substances, without bothering to ascertain their chemical nature. By the 1850's, many firms had entered the field. " All of these firms," wrote J. U. Lloyd, " listed their products under various titles, such as Alkaloids, Resinoids, Resins, and Concentrated Medicines, some even attempting to group or classify the various substances. But, as a rule, no attempt was made to distinguish between useful agents and those questionable, or between the

[39] *Amer. Journ. Pharm.*, *30*:187.
[40] *Ibid.*, *26*:569, 1854.
[41] *Ibid.*, p. 570.

unworthy and those entitled to a systematic position, by legitimate scientific nomenclature." [42]

William Cook, Neo-Thomsonian Par Excellence

Of considerable historical interest is the now forgotten and exceedingly rare treatise by William H. Cook, entitled the *Physio-Medical Dispensatory*, Cincinnati, 1869. (See fig. 1.) Written by a prominent Neo-Thomsonian leader, teacher and editor, this volume of 832 pages represents perhaps the most ambitious attempt to synthesize the therapeutics, materia medica, and pharmacy in vogue among the Neo-Thomsonians of the post-Civil War period. The initial printing of this book must have been very meager, since this writer has been able to locate only three copies of the book in the United States, thus far.[43] Perhaps this would account for the virtual absence of references to Cook's work in the literature, although J. U. Lloyd has commented briefly on it in a paper devoted to American pharmacopoeias and dispensatories.[44]

As would be expected, the preface to the *Physio-Medical Dispensatory* contained a savage attack on regular medicine. The author made the observation that mercurials, blood-letting, arsenic and antimony, " which had been the pride of allopathy for one and two hundred years were now being pushed aside to make room for opium, aconite, veratrum, bromine, bismuth, woorara [curare?], prussic acid, and strychnine." [45] Dr. Cook continued:

> And when, through so many generations of a monopoly in medical facilities, they fail to develop a Materia Medica upon which they can themselves place any reliance, they are in no position to lay claim to the public confidence. Such is the status of the Allopathic school of physicians this day; and their confessions of their own uncertainties and their own failures, show that they have established

[42] Lloyd, J. U.: *A Treatise on the American Alkaloids, Resins, Oleo-Resins and Concentrated Principles (so-called Eclectic Concentrations)*, Drug Treatise No. XXIV, Lloyd Brothers, Cincinnati, Ohio, 1909, p. 15. This development had important repercussions for American pharmacy during the nineteenth century.

[43] At the Lloyd Library, Cincinnati, Ohio; the John Crerar Library, Chicago; and in the University of Illinois library. Wilder lists an 1872 printing of the *Physio-Medical Dispensatory* (*History of Medicine*, p. 866) while Otto Juettner mentions an 1858 issue of Cook's work containing 720 pages (*Daniel Drake and His Followers*, Cincinnati, 1909, p. 475 ff.).

[44] *Western Druggist*, *21*:19-20, 1899. Lloyd merely stated that " This work is authority with the followers of Samuel Thomson, and is a very interesting publication. This school of medicine (physio-medical) excludes poison from its materia medica, and has many advocates in the middle west."

[45] *The Physio-Medical Dispensatory*, p. 4.

THE

PHYSIO-MEDICAL DISPENSATORY:

A TREATISE ON

THERAPEUTICS, MATERIA MEDICA, AND PHARMACY,

IN

ACCORDANCE WITH THE PRINCIPLES

OF

PHYSIOLOGICAL MEDICATION.

BY

WM. H. COOK, M. D.,

PROFESSOR OF BOTANY, THERAPEUTICS, AND MATERIA MEDICA IN THE PHYSIO-MEDICAL INSTITUTE; LATE PROFESSOR OF SURGERY IN THE PHYSIO-MEDICAL COLLEGE OF OHIO.

CINCINNATI:

PUBLISHED BY WM. H. COOK,

NO. 101 WEST SIXTH-STREET.

1869.

FIG. 1

Title page of Wm. H. Cook's rare *Physio-Medical Dispensatory*.
Courtesy of the Lloyd Library, Cincinnati.

nothing reliable in therapeutics, but are adrift upon the sea of experiment, with a list of poisons for sheet-anchors.[46]

The Homeopaths also came in for their share of castigation, but the bitterest denunciation of all was directed against the Eclectics, "a sect without a tenet in science, and claiming a merit for the number and boldness of its conflicting plagiarisms." [47]

Dr. Cook devoted a major portion of his book to a discussion of Neo-Thomsonian materia medica (557 pages). There were some 350 items arranged alphabetically, the vast majority being plant drugs, with only a sprinkling of "minerals." The monographs consisted of: 1. Latin binomial nomenclature of plant; 2. Common names; 3. Botanical description (including order, genus, habitat, etc.); 4. Properties and uses (including parts of plant used and therapeutic indications); 5. Posology; and 6. Pharmaceutical preparations and dosage.

By this time, the old Thomsonian outcry against "minerals" had been modified to an attack against "poisons," whether of mineral or plant origin. This made for a more consistent policy, permitting the inclusion of such chemicals as Creta Preparata, magnesium carbonate, etc., in Cook's "sanative materia medica." Physio-Medical practitioners would have been quick to deny that their rejection of a substance as a poison, or their acceptance of some remedy as "sanative" was dictated by subjective and arbitrary factors. Acceptance or rejection, they would have stoutly maintained, was determined by bedside experience and observation. Thus, for example, according to Cook, bitter root (Apocynum androsaemifolium), "has by some been called poisonous, but we are abundantly able to certify the contrary." [48] Similarly, cinchona and quinine, which had been violently spurned by the old Thomsonians, were accepted by Cook after reassuring his disciples that "It is a common suspicion that this article [quinine] is poisonous, and I was at one time inclined to share in this belief, but careful observation has satisfied me that such is not the case." [49]

It is safe to say that Cook's treatise was little known beyond the circle of his followers, who were then mainly concentrated in the mid-West. Nevertheless, the *Physio-Medical Dispensatory* remains an invaluable source of information for the historian.

[46] *Ibid.*, p. 4.
[47] *Ibid.*, p. 8.
[48] *Ibid.*, p. 253.
[49] *Ibid.*, p. 359.

John Uri Lloyd: An Anomaly

A notable exception to the general run of Eclectic compilations was the quarterly publication, *Drugs and Medicines of North America,* written by the eminent pharmacist, John U. Lloyd, an adherent of the Eclectic school, in collaboration with his brother, Curtis G. Lloyd. This valuable and original study of the indigenous plant materia medica was published at irregular intervals from 1884 to 1887. Volume one, completed in 1886, was devoted to an exhaustive investigation of indigenous plant drugs of the order Ranunculaceae. Volume two, begun in 1886, but unfortunately terminating publication with the fifth number in 1887, considered in detail medicinal plants occurring in several other orders. John U. Lloyd assumed responsibility for those sections of the work dealing with phytochemistry, pharmacy, and commercial history, while his brother, a prominent botanist and mycologist, undertook to elucidate the purely botanical aspects of the study.

It should be pointed out, in passing, that a number of plant drugs employed exclusively in Botanic practice, eventually entered the official pharmaceutical compendia (U.S.P. or N.F.).

C. S. Rafinesque and the Eclectics

In a preliminary study of Rafinesque, this writer expressed the opinion that the distinguished naturalist deserved consideration by historians of pharmacy and medicine as a challenging figure in the context of the nineteenth century botanico-medical movement.[50] Although further investigation has confirmed this view, the task of clearly defining Rafinesque's position in the current of botanico-medical activity is not an easy one. This is principally due to two factors: Rafinesque's intensely individualistic and unconventional attitude which prevented his formal affiliation with any particular group; and the necessity to demolish many unsupported statements about Rafinesque, zealously propagated for the most part by later Eclectic writers. Nevertheless, Rafinesque's position in the mainstream of the botanico-medical movement can be established through a discussion of the following points: a) the widespread utilization by Botanic practitioners of Rafinesque's *Medical Flora* (1828-1830) in contrast to the hostility or indifference evinced by regular physicians towards this work; b) relation of Rafinesque to the Eclectics;

[50] Berman, A.: "C. S. Rafinesque: A Challenge to the Historian of Pharmacy," *Amer. Journ. of Pharm. Ed., 16*:417, 1952.

and c) Rafinesque's critical attitude towards regular medicine, and his own brief venture into medical practice as a lung specialist or "Pulmist."

F. R. Packard's reference to the *Medical Flora* as a book which became the vade-mecum of the Botanic physicians[51] is generally correct, but it should be kept in mind that this was true only of the more educated Botanics, and that the Botanic writers previously mentioned borrowed from many other authorities besides Rafinesque. Not only did Botanic authors such as Elisha Smith, Horton Howard, Wooster Beach, Morris Mattson, and others make use of Rafinesque's *Medical Flora,* but copious references and abstracts appear in such periodicals as Alva Curtis' *The Botanico-Medical Recorder*[52] and in the independent *Botanic Medical Reformer,* under the editorship of Thomas Cooke, who later became an Eclectic. Cooke had purchased the plates of the plant illustrations of the *Medical Flora* soon after Rafinesque's death, and began publishing them in 1841 in his journal.[53] Subsequently, these plates came into the possession of Wooster Beach, who used them to illustrate later editions of his *American Practice of Medicine.*[54] While the *Medical Flora* met a favorable reception among Botanics, and was used as a reference book, Rafinesque's treatise received a cold reception by the regular physicians and was either ignored (e. g., by G. B. Wood) or severely criticized by such authors as R. E. Griffith[55] and A. Clapp.[56] The reasons for this were his unorthodox views, his eccentricity, and his reputation for being unreliable.

[51] Packard, Francis R.: *History of Medicine in the United States,* New York, 1931, v. II, p. 1229.

[52] See *The Botanico-Medical Recorder,* Columbus, Ohio, vol. [illegible] 1837-38. There are numerous references interspersed throughout the volume regarding Rafinesque and the *Medical Flora.*

[53] Cooke announced the purchase of these plates in the *Botanic Medical Reformer,* Phila., 1841, vol. 1, p. 105. These had been purchased on Dec. 19, 1840.

[54] Wilder, *op. cit.,* p. 421-22.

[55] Griffith, R. E.: "On Fraseri Walteri," *Journ. Phila. Coll. Pharm.,* 3:269-273, Jan. 1832. Griffith wrote: "In the Medical Flora of Mr. Rafinesque, a work we are induced to quote, from its containing much valuable information on our native plants; though unfortunately so mingled with wild hypotheses and unsubstantiated assertions, as to render it an unsafe guide."

[56] Clapp, A.: *A Synopsis; or Systematic Catalogue of the Medicinal Plants of the United States,* Philadelphia, 1852, p. 8. Clapp referred to Rafinesque and the *Medical Flora* as follows: "an ingenious but injudicious botanist (who created many new species out of the slightest variation of plants, which have not received the sanction of other botanists) was not a physician, and is not entitled to much confidence in regard to the properties of plants, when unsupported by other authorities; yet, as his account of them in his *Medical Flora* was mostly compiled from preceding writers—mostly from Schoepf, Thacher, Bigelow, Ives, and the two Bartons—it is therefore worthy of more credit than it could otherwise claim."

Moreover, he had also antagonized the regular medical profession at this time by setting himself up in practice as a "Pulmist," or a specialist in the treatment of consumption, without benefit of a license or an M. D. degree.

The favorable acceptance of Rafinesque's treatise by the Botanics and its hostile treatment at the hands of the regulars has led to some startling statements in the literature, the most fantastic being Otto Juettner's assertion that "C. S. Rafinesque, author of a book on 'the Medical Flora of North America' (Philadelphia, 1828), is really the originator of the botanical movement." [57]

In the 1890's, Wilder, Felter, and other Eclectic writers began to build up Rafinesque as one the early founders of Eclecticism. Editorial comment and articles in the *Eclectic Medical Journal,* for example, referred to the *Medical Flora* as "the first work in science that complimented the Eclectic profession," [58] and to Rafinesque as one who had "divined the advent of the new [Eclectic] school of medicine." [59] An excerpt from a letter which had been buried for years among the dozens of testimonials printed in various editions of the *American Practice and Family Physician,* was dusted off and submitted as prima facie evidence. This excerpt reads as follows:

> I must now state again that I think highly of your Medical work: I belong, like yourself, to the Reformed School of Medicine, and agree with you much better than with Thomsonian, Homeopathic, and Botanical Empirics. Your system is a good one, if not perfect: it is better, at any rate, than most of the fashionable systems, Galenian, Brunonian, or mineral. Your system of surgery appears benign and safe, and much better than the old butchering system.

Just as it appeared that a good case had been made for claiming Rafinesque as an early Eclectic, and that much-needed luster had been gained by Eclecticism, a very disconcerting episode occurred. Professor H. T. Webster, a prominent Western Eclectic, and editor of the *California Medical Journal,* shocked his colleagues by publishing an editorial in 1898 in which he declared among other things that Rafinesque "never claimed to be an Eclectic." (See Appendix.) Out of a clear sky, Webster had presumed to challenge the cherished Rafinesque-Eclectic relationship, had impugned the originality of his colleagues, and had accused Scudder,[60] a

[57] Juettner, Otto: *Daniel Drake and His Followers,* Cincinnati, 1909, p. 110-111.
[58] *Eclectic Med. Journ., 55*:50, 1895.
[59] Wilder, A.: "The Earlier Period of Eclectic Medicine," *Eclectic Med. Journ., 61*:68, 1901.
[60] John M. Scudder (1829-1894), one of the foremost Eclectic leaders and teachers was

name revered in Eclectic circles, of borrowing the majority of his remedies from Rafinesque. This challenge could not go unanswered, and the *Eclectic Medical Journal,* the most influential publication of the movement, trained its big guns on Webster, while another journal, the *Eclectic Medical Gleaner,* launched a highly personal attack on the California professor.[61] In a spirited rebuttal, Webster steadfastly maintained that there was no evidence that Rafinesque had even been an Eclectic, and that most Eclectic remedies "have been used by others prior to their adoption by our school."[62]

The net effect of Webster's action, and the ensuing dispute, was not only to cripple the attempt to portray Rafinesque as a champion of early Eclecticism, but also gave ammunition to the enemies of the movement, who had always maintained that the Eclectic slogan borrowed from Rafinesque[63] was a convenient excuse to appropriate and plagiarize from others.

In November of 1827, under the pseudonym of "Medicus," Rafinesque began a series of advertisements in *The Saturday Evening Post* of Philadelphia, in which he announced to the public his discovery of "Pulmel" as a "cure" for consumption. Two years later, in 1829, Rafinesque published a brochure under his own name, entitled: *The Pulmist, or the Art to Cure and Prevent Consumption.* This work was subsequently translated into French and published in Paris in 1833.

In his introduction, Rafinesque stated that when he was ill with consumption, he had treated himself with his own methods and had recovered. "My previous skill in practical and medical botany," he wrote, "enabled me to discover . . . the probable effect of some active plants; and by their mixture . . . I restored myself to perfect health. . . ." He also informed his readers that he was "prepared to contend with a host of prejudices and the established routine of the faculty," and he justified the secret com-

associated for many years with the Eclectic Medical Institute. His doctrine of "specific medication" which was published in a book by the same name in 1871, was one of the most influential works in Eclectic literature.

[61] A blow-by-blow citation of the editorial comments on this controversy is given in the Appendix.

[62] See Appendix.

[63] Rafinesque, in his classification of physicians given in the Introduction to the *Medical Flora,* defined Eclectic practitioners as "those who select and adopt in practice, whatever is found most beneficial, and who change their prescriptions according to emergencies, circumstances and acquired knowledge" (*Medical Flora,* I, p. iv). There is no evidence that this designation was intended to apply to the followers of Wooster Beach. Later Eclectic physicians simply appropriated this characterization and name as applying to their mode of practice.

position of remedies on the ground that " anyone has a right to withhold for a time the results of his experience, until he is remunerated. . . ." As far as can be learned, the precise nature of his medication, which he called " Pulmel," was never divulged. " Pulmel " was described by Rafinesque as follows: " It is a peculiar compound substance, formed by the chemical combination of several powerful vegetable principles, acting on the lungs and the whole system. It contains no pernicious nor poisonous substance. The taste and smell are fragrant, and balsamic." [64] There is in existence an original manuscript of a medical consultation by Rafinesque, in the possession of the New York Public Library. This " medical consultation " has been edited and annotated by Mabel Clare Weaks.[65]

As might be expected, the regular practitioners reacted very strongly against Rafinesque's intrusion into their field. Dr. Daniel Drake, writing in the *Western Journal of Medical and Physical Sciences,* in 1829, denounced Rafinesque as a quack and classed him with Samuel Thomson, William Salmon, William Swaim, and Samuel Robinson.[66] Curiously enough, this writer has been unable to find a single reference in any Botanic work to Rafinesque's venture into medical practice as a " Pulmist."

On the basis of evidence that this writer has been able to uncover, Rafinesque's position in the botanico-medical movement may be summed up as follows:

1. Rafinesque's *Medical Flora* was used extensively by all Botanic factions.

2. Rafinesque thought highly of Beach's system of medicine, but never became affiliated with any Botanic sect. Eclectics later attempted to use his name for propaganda purposes.

3. Rafinesque was critical of the regular medical profession, as can be seen from reading the introduction to the *Medical Flora.* He preferred to use plant medicinals rather than mineral, and for a brief period competed with the regular physicians by setting himself up as a " Pulmist." His role as an unlicensed physician was strictly on a free-lance basis.

[64] Rafinesque, C. S.: *The Pulmist, or the Art to Cure and to Prevent the Consumption,* Philadelphia, 1829, p. 67.

[65] Weaks, Mabel Clare (ed.): " Medical Consultation on the Case of Daniel Vanslyke. By C. S. Rafinesque, Pulmist, &c. Philadelphia 10th Septr. 1830," *Bull Hist. Med., 18*:425-437, 1945.

[66] Drake, Daniel: " The People's Doctors," *The Western Journal of Medical and Physical Sciences,* 1829, p. 395.

Epilogue

"It has been a cause of profound regret and humiliation," wrote Alexander Wilder ruefully, "that so few practitioners, even among those who profess to belong to a school of botanic medicine, have been disposed to acquire any thorough or even any considerable knowledge of scientific botany." [67] This observation would have been appropriate to the vast majority of 19th century regular physicians as well as to the Botanics. To the man in the street, it meant nothing, however, that among the regulars there were to be found a number of excellent medical botanists, vastly superior to the best that the Botanics could offer. The Botanics could point out that the regulars were killing their patients with heroic medication, and were trying to create a medical monopoly. This was a very effective argument in an era of Jacksonian democracy.

Though Dr. Daniel Drake might sneer at the "People's Doctors," [68] the champions of Thomsonianism and Botanicism such as Samuel Robinson, addressed their follow citizens in ringing tones:

> And in thus submitting the "New Guide to Health" to the public scrutiny of their fellow citizens, the friends and followers of Dr. Thomson have pursued the *path* marked out to them by many of the greatest men of antiquity; who often turned aside from the forms and dogmas of the schools to submit their cause to the tribunal of public opinion. And they were never deceived: For God has lodged the fund of common sense in the mass of the assembled multitude. These assemblies were dear to every land of liberty; and it was on the appeal to that assembly, and its decisions, that the ancients established the maxim, so often in their mouth, ***vox populi, vox Dei.***[69]

APPENDIX

The Rafinesque Controversy

1.

(Excerpt from an editorial by Dr. H. T. Webster in the *California Medical Journal, 19*: 284, 1898.)

> . . . Since my time Eclectics have introduced only three remedies which have come to stay. All the rest have been borrowed. The majority of Scudder's specifics were introduced by Rafinesque (who never claimed to be an Eclectic), and a few of them had been previously used by homeopathists. Now do not understand me to

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[67] *Eclectic Med. Journ., 58*:686-87, 1898.

[68] Drake, D.: *op. cit.*

[69] Robinson, S.: *A Course of Fifteen Lectures on Medical Botany*, Columbus, 1829, pp. 18-19.

assert that they are not valuable, and that their introduction as specifics by Scudder was not creditable. I simply assert that they were not introduced as remedies by Eclectics—they have used them second hand in their own peculiar way. The fact is, there are very few Electic remedies, pure and simple.

2.

(Excerpt from an editorial entitled "Rafinesque, The Eclectic," *Eclectic Medical Journal, 58*: 669, 1898. This editorial attacked Webster.)

Professor Webster, of California, has asserted in a recent journal issue, that Rafinesque, the talented author, whom Professor King considered foremost among early reformers, "never claimed to be an eclectic." We claim that he did, and that he opposed the regular school of medicine vehemently, and that his writings, as well as his affiliations, prove it undeniably. With all kindness to Professor Webster, who has no just cause to attack these fathers who served him well, we assert that Rafinesque was one of the men who helped to give our school a place in history and we call on Professor Webster for his authority.

3.

(Excerpt from an editorial in the *Eclectic Medical Gleaner, 9*: 378, 1898. Highly personal in nature, this editorial severely criticized Webster, and was signed with the initial "B" which stood for W. E. Bloyer, one of the co-editors.)

As an eclectic, and as a friend of Dr. Scudder, we demand of Dr. Webster the proof of his assertion. We demand of him the name of one specific medicine introduced by Rafinesque. We assert that *Rafinesque did not introduce a single specific medicine*; that he was a botanist who affiliated with our school, and that he claimed to be a Reformer, and an eclectic after the manner of Beach and King. Eclectics and eclecticism have made Prof. Webster. And now he again asks favors of our people. Does he expect to gain them by so viciously and maliciously attacking our honored dead?

4.

(A vigorous rebuttal by Webster to the *Eclectic Medical Journal* is given in the following excerpt from an editorial by Webster entitled "Was Rafinesque an Eclectic" in the *California Medical Journal, 19*: 334-45, 1898.)

. . . the writer asserts that Rafinesque did claim to be an Eclectic, and assumes to prove it, when the proof really fails to materialize. Rafinesque states in the quotation offered [excerpt of Rafinesque's letter to Beach] that he belongs like Beach, to the Reformed Practice of Medicine, and that he agrees with Beach "much better" than with the Thomsonian, or Homeopathic, or Botanic system.

In other words, while he does not agree with him altogether, he agrees "better" than with the other systems. Observe the comparative adjective.

I have given considerable attention to Rafinesque's position as a medical man; and several years ago I made a search for data which might inform me upon the subject, for the reason that I was anxious to claim him as an Eclectic. I found, however, that he never affiliated with any school, though he expressed himself as favorably impressed with the faith of the Eclectics. Had he allied himself with any school, it would have probably been the Eclectic; but he stood aloof from them all, and never formed any affiliations of the kind . . . Out of . . . books and pamphlets published by him, not a word appears suggesting a treatise on Eclectic or Reformed Medicine—not even a pamphlet. If, therefore he had been a partisan in medicine, there is little doubt that he would have devoted some one of his literary efforts to the support of the cause he espoused. In fact, he was not so much an enthusiastic physician as scientist and naturalist . . .

. . . I do not deny that Rafinesque was good timber for an Eclectic; but I do assert for the sake of argument that ***he never claimed to be one.***

5.

(A savage rejoinder by Webster to the *Eclectic Medical Gleaner* entitled "B. and His Tribulations" is given in the following excerpt of an editorial in the *California Medical Journal, 19*: 345-46, 1898.)

B., which may stand for bluffer, editor of the tail end of the *Eclectic Medical Gleaner,* seems to have a large sized grievance against the writer on his hands . . .

The particular cause of offense to B's nice sensibilities is the statement that "the majority of Scudder's specifics were introduced by Rafinesque." As an "eclectic" and friend of Prof. Scudder, he "demands" the name of a single specific introduced by Rafinesque. This is a brilliant idea for one of B's calibre. He sees, or has been told, that it might be difficult to prove that Rafinesque did not get his remedies second hand. There is no doubt that some of the remedies named in Rafinesque's work were used before his time; but we have his word, in the preface of his book, that he travelled over 8000 miles among the aborigines, gathering therapeutic data upon indigenous plants, and that what he recorded there is the fruit of such search * . . . The probabilities and evidence are in favor of my statement; and, if this matter is stirred up sufficiently, I will bring documentary material forward to forever settle B's quibble.

. . . B's senseless twaddle about "Eclectic remedies" and "pilferings from other schools" demonstrates the dense ignorance which he parades, in lieu of the wisdom of a teacher and leader. He is too stupid to know that the majority—and the very

* In all fairness, Webster should have mentioned that in the introduction to volume one of the *Medical Flora,* Rafinesque scrupulously acknowledged his debt to a number of outstanding American physicians and appended a long list of authors consulted as references; for example: the two Bartons, Beck, Bigelow, Bartram, Chapman, Clayton, Coxe, Drake, Ives, André Michaux, S. L. Mitchill, Pursh, Schoepf, Thacher, Torrey, and many others.

large majority—of the remedies used by Eclectics have been used by others prior to their adoption by our school. It is such ignoramuses as this that are a reproach to us, and who call down the derision of other schools upon us. We cannot afford to live by deception and fraud; and only the plea of ignorance (which may be a just one in his case) can excuse us from such a reproach, when we parade the idea that we have introduced our own remedies, use no others, and in this respect are distinctive. We have undoubtedly peculiar, distinctive remedies, methods, and perhaps peculiar doses; but only an ignoramus will attempt to maintain that we have introduced more than even a small bulk of our own remedies. We have appropriated and improved upon the uses of what others introduced, in most cases.

THE DOCTORS MARCH TO ARMSBY OF ALBANY *

EMERSON CROSBY KELLY **

The names of Doctors Alden March and James H. Armsby are always pleasantly associated in speaking of the founding of the Albany Medical College. The explanation for this association is that they were brothers-in-law. But that does not necessarily prove a thing: witness the combination of two of the world's greatest etchers, Sir Francis Seymour Haden, the surgeon, and James A. McNeill Whistler, brothers-in-law who were mutually at burin points.

Alden March was born in 1795, on a farm at Sutton, Worcester County, Massachusetts. Without a doubt his interest in a medical career arose from admiration of a brother, Dr. David March, a surgeon's mate in the War of 1812.

The Albany Medical College is fortunate today in the posession of most of the original papers of Dr. Alden March. Several years ago our institution received, from a distant March relative, a wooden box without a lid, in which a mother mouse had made a home for her family but with discrimination in appropriating relatively uninteresting papers.

The earliest record in the notebook of Alden March is dated March 14, 1818, under the title, " Sketches of Cases of operative Surgery performed by David March, M. D." Seven operations and one postmortem examination are briefly described.

Alden studied with his brother, then went up to Boston in 1818 to work under Dr. William Ingalls. His notebook begins bravely, " Sketches of anatomical lectures delivered by William Ingalls, M. D., at Boston, Nov. 18, 1818." Eight lines summarize the first two lectures: " 1st Introductory Lecture on Osteology, comprising History of Anatomy and its origin and progress, on a general plan. 2nd Lecture on Osteology, Myology, Adenology, Hydrology, Nurology [*sic*], Pathology, Sarcology, Splanchnology, and Sundesmology [*sic*], giving their definition, and what they were derived from." At the bottom of the page is the signature of William Ingalls, apparently to certify that Alden March had attended

* Read at the twenty-eighth annual meeting of the American Association of the History of Medicine, Detroit, May 12, 1955.

** From the Department of Surgery, Albany Hospital and Medical College.

the course. March listed a payment of fifteen dollars for tuition, so he certainly must have attended more than two lectures.

After studying in Boston, Alden March entered the medical department of Brown University. A manuscript of twenty-two pages in his handwriting is dated Sept. 6, 1820, " at Brown University, Providence, Rhode Island." Its title is " Enteritis, or Inflamation of the Intestines," and probably is his graduation thesis. The paper naturally follows the teaching of the day, advocating blood letting, leeching, blistering and the antiphlogistic regimen. One case used as an example was that of a young woman on whose body Dr. David March had performed an autopsy two years previously. Alden was making use of all his limited experience. The record then lists the expense on Sept. 12, 1820, " of travvelling from Sutton to Hoosick, to Schenectady, and to Albany."

The year after his arrival in Albany, Dr. March started a course in anatomy for fourteen students, using a room on Montgomery Street, near Columbia Street. He obtained from Boston his material for dissection which was transported in his wagon. The citizens did not like the idea of teaching anatomy by dissection, and the doctors of Albany certainly did not coöperate, to say the least, with Dr. March. At one point, because of the scarcity of patients and inability to pay his rent, March seriously considered moving to Schenectady. But his landlord was an understanding man; collection of the rent was postponed, and March remained in Albany to continue his annual course in anatomy.

Love enters the arena of Albany medical education in the name of Armsby. Dr. March returned in 1824 to the town of his birth, Sutton, to take a bride by the name of Miss Joanna P. Armsby. The bridegroom thereafter had additional stimulation to increase his income, the income necessary for raising a family.

A year after marriage, in 1825, Dr. March joined the faculty of the Vermont Academy of Medicine at Castleton, Vermont, as Professor of Anatomy and Physiology. The Academy catalogue states, " The course of instruction commences at the Medical College in Castleton, on the first Thursday of September annually, and continues fifteen weeks. There are five lectures daily, through the whole term, and occasionally six." It seems reasonable to suppose that it was not only love for teaching which took March by horse and buggy, over early dirt roads, into another state. The doctor needed the financial returns.

One of the famous professors at Castleton was Dr. William Tully, who became a partner with March in Albany in 1827. The two doctors made the trip together to the Vermont school for three years. Dr. Tully then

graduated to the larger and more important field at The Medical Institution of Yale College.

In 1830, as an introductory lecture to his course of teaching in Albany, Dr. March delivered "A Lecture on the Expediency of Establishing a Medical College and Hospital in the City of Albany." He saw the importance of medical teaching and hospital accommodations in the growing city; and besides, he was growing tired of making the long trip to Vermont.

Back in Sutton, Massachusetts, Mrs. March had an unfledged brother, James H. Armsby, a lad of only fourteen when the Marches were married. The boy must have been impressed by his brother-in-law, and decided to follow in the footsteps of his hero. Accordingly James was brought to Albany in 1831 and became a part of the March household. He accompanied Dr. March on the rides to Castleton, entered the medical school there and was graduated in 1833.

To give March more time to devote to his private practice, to his Albany school, and to founding a medical college in Albany, Dr. James Armsby, in the year following his graduation, took over his brother-in-law's chair of Anatomy and Physiology at Castleton. Dr. March established an Albany medical branch of the Vermont Academy of Medicine, but after two years the school was given up as unpractical. March then suggested that the Boy's Academy establish a medical department, but nothing came of that idea.

Yearly the Legislature of the State of New York was petitioned for the establishment of an Albany Medical College, and yearly the influential men of the already established schools, the College of Physicians and Surgeons of Columbia University in New York City, and the College of Physicians and Surgeons of the Western District, at Fairfield, remonstrated and blocked action of the Legislature. Their selfish aim was to protect their own schools.

Meanwhile, to undermine the resistence of the Albany and New York State citizens, a series of popular evening lectures was given in Albany by Dr. Armsby. He was an entertaining speaker, and the presentations became a familiar means of entertainment. The whole country was thirsty for knowledge, and as many as three hundred persons attended a single lecture, the audience consisting of leading citizens, members of the Legislature, and strangers within the city.

After one of Armsby's lectures in 1837, the citizens formed a body which appointed committees and started a serious effort for an Albany Medical College. The city donated for one dollar a year the empty Lan-

caster school building. After repairs and enlargements to the building, Drs. March and Armsby opened a museum of comparative anatomy and surgical specimens. They invited the public, "including Ladies," to visit the museum, and to learn of the plans of the new school. A preliminary catalogue was printed.

On January 2, 1839, the Albany Medical College was opened. Fifty-seven students were enrolled for a course of sixteen weeks. Thirteen doctors were graduated. In the middle of the course, on February 16, 1839, the Legislature granted a Charter. There must previously have been a fairly definite, but occult, assurance of a charter.

The first faculty of the Albany Medical College consisted, among others, of Alden March, M. D., President and Professor of Surgery, and James H. Armsby, M. D., Dean and Professor of Anatomy and Physiology. It has never been suggested, however, that the new school was a family affair for too many other physicians of the faculty and too many citizens had important parts in the fruition of March's dream of 1830, nine years previously. But March had found in Armsby, his brother-in-law, not only a faithful relative and intimate friend, but also an intelligent young man and a popular lecturer on scientific subjects. Theirs was a rare association, which continued with the founding of the Albany Hospital. On "An Act to Incorporate the Albany Hospital, Passed April 11, 1849," the names of March and Armsby are listed as Surgeons.

Each of the two brothers-in-law in this happy combination nevertheless led his own private life. In 1841 Armsby married Miss Anne L. Hawley. Each doctor had his own office for private patients, each did his own scientific work (undoubtedly in close coöperation with the other), and each published his scientific papers. And each had a son who became a physician.

Dr. March held the office of President of the Medical Society of the County of Albany in 1832 and 1833, of the New York State Medical Society in 1857, and of the American Medical Association in 1864. He was an honorary member of the Massachusetts, Pennsylvania, Connecticut, and Rhode Island State Medical Societies. Williams College gave him the honorary degree of LL. D. in 1868.

Dr. Armsby was President of the Medical Society of the County of Albany in 1851 and 1852, and a delegate to the American Medical Association in 1854. He was active in the founding of the Dudley Observatory and the Albany Law School, and was a trustee of the Albany Female Academy. Rutgers College and Rochester University

both conferred the degree of Master of Arts, and Yale College Natural History Society made him an honorary member.

After the sweet and melodious andante comes the forceful finale, with raucous notes.

Dr. March returned to Albany on May 12, 1869, from a meeting of the American Medical Association in New Orleans. He had reached his seventy-fourth year and for some time had been troubled with hypertrophy of the prostate and difficulty in urination. When his trouble became acute, he was moved to the home of his daughter, Mrs. David I. Boyd, at 2 Park Place, Albany, "to be spared the annoyance of business importunities."

Dr. Armsby passed a catheter, and in his own words, "The instrument passed without difficulty its whole length, without entering the bladder; blood coagulated in the catheter, and no urine passed through it, but some passed external to it and followed its withdrawal. . . . At the second attempt, he was put under the influence of chloroform, and a longer instrument than usual was employed. It was passed readily the whole length of an ordinary catheter until it met a firm, resisting body, and seemed to fall into a cul-de-sac in which its point was fixed. . . ." After an illness of eleven days, "His spirit quietly departed on the morning of June 17 [1869]."

A necropsy showed that the catheter had made a false passage, and that the patient had died of uremia. Dr. Armsby thought it advisable, in view of the illustrious position of his patient, to print a history of the case and the postmortem findings. The small pamphlet was distributed to the classes at the medical college.

The storm broke in full fury. A Dr. Charles A. Robertson of Albany, an eye and ear specialist, published a long article condemning the treatment given to Dr. March, holding Armsby up to ridicule, calling the postmortem report an unscientific presentation, and mentioning malpractice and fraud. One of March's attending physicians, the venerable Dr. James McNaughton of seventy-three years, declared at a meeting of the Medical Society of the County of Albany that Robertson's pamphlet was "the grossest breach of medical ethics which has occurred in this city or county during the last fifty years."

Dr. Robertson detailed a long history of his petty annoyances and grave abuses at the hands of Armsby, extending from stealing of patients, manipulation of the governing bodies of the medical school and hospital and misuse of funds. "I will go further, and assert my belief that no one will deny that he is a vain and pretentious self-seeker, an oily-tongued and

velvet-footed hypocrite, and an insidious, unscrupulous and unrelenting foe." Robertson accused Armsby of maltreating March so that Armsby could inherit the chair of surgery at the medical college. It is difficult by today's standards to comprehend the amount of acrimony and vitriol diffused into the placid air of Albany's medical and social atmosphere.

One of the chief bones of contention, but in reality only a spark to the fuse, was an article which Armsby caused to be printed in the newspapers, stating that the Albany Medical College would continue in its accustomed way, even though Dr. March had died. Robertson made a great issue of what he called unethical advertising, and brought the whole subject before the county medical society in a stormy session. Armsby, on this score, was found not guilty. Three days after his attack, Robertson was removed from his position as eye and ear physician at the Albany Hospital. With more fuel for his fire, Robertson accused Armsby of the manipulation.

Nearly everyone took sides, and words and pamphlets flew right and left. What they would have done with radio and television!

But Armsby continued in his high positions at the medical school and hospital. "His death, which was sudden, due to an affection of the heart, occurred December 2, 1875." Robertson died in 1880, at the age of fifty-one (probably of hypertension).

Armsby must have been dearly loved by his students and the Albany citizens. A fund was raised "by the Alumni, and other friends," for a memorial, and on November 25, 1879 a bust was unveiled in Albany's Washington Park, where it still stands. "The Bust, executed by Mr. E. D. Palmer, and cast in bronze . . . stands confessedly as unequaled by any like establishment in the world."

So ends the story of the brothers-in-law, the Doctors March and Armsby. Their institutions, the Albany Medical College and the Albany Hospital, still flourish. The good men do lives after them, in this case, and the evil is interred in the bonedry journals and pamphlets.

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

ABSTRACTS OF PAPERS READ AT THE TWENTY-EIGHTH ANNUAL MEETING*

May 12, 13, and 14, 1955

Thursday Afternoon, May 12, 1955: General Session

DE AFFECTIONIBUS HYSTERICIS ET HYPOCHONDRIACIS

ILZA VEITH

Although Charcot is generally credited as being the first physician to demonstrate hysteria in men, many of his findings were anticipated by Thomas Sydenham, late in the 17th century. In answer to a request from another well-known physician, Sydenham presented his views on hysterical afflictions in his *Epistolary Dissertation*, stating that "of all chronic disease hysteria . . . is the commonest [and that] such subjects as lead a sedentary or studious life, and grow pale over their books and papers, are similarly afflicted; since, however much antiquity may have laid the blame of hysteria upon the uterus, hypochondriasis . . . is as like it as one egg is to another." Sydenham's choice of the word hypochondriasis to describe the male version of hysteria was intended to dispel the objections of his literal-minded colleagues. They maintained that a freely migrating uterus (*hystera*) caused the disease, which was therefore restricted to women, and they saw hypochrondriasis with its concomitant melancholia as a separate disease entity, generally restricted to men. By describing the physical and mental disturbances of hysterics and hypochondriacs and by stressing the similarity of their pattern of behavior he proved the identity of these states and concluded that it was not the "corruption of either the semen or the menstrual blood . . . to which this disease is to be referred." Sydenham's etiological concepts for his dual entity, hysteria-hypochondriasis, are a mixture of the beliefs of his time with his own new insights. He assumed that an imbalance of the "animal spirits" upset the mind-body relationship and caused disturbances in that part of the body which happened to be weakest at the moment. The latter part of this statement was later described by Freud as "das Entgegenkommen der Neurose." Although Sydenham's therapeutic measures in hysteria were tradition-bound and directed to the physical symptoms of the disease, it may be assumed that his intensive concern with the mental sufferings of his hysterical patients had the ameliorating effect which he ascribed to these other ministrations.

* The abstracts provided by the speakers have been edited by the Editorial Committee of the Association.

RELATIVISM IN THE HISTORY OF SMALLPOX INOCULATION

GENEVIEVE MILLER

A review of the historiography of smallpox inoculation exposes the phenomenon of historical relativism, whereby the forces of current history have predetermined the attitude of the historian towards his subject and distorted his historical narrative. Dissimilar reasons for writing history provided different bases for selection of material and its interpretation. Roughly three distinct periods of treatment of the subject may be adduced: (1) the pre-Jennerian epoch, when history was fundamentally didactic and polemic, being used as one of the propaganda weapons to introduce a medical innovation into a society unprepared ideologically and emotionally for the seemingly "unnatural" process of deliberately causing illness; (2) the nineteenth century, which witnessed the triumph of Jennerian vaccination and discounted its antecedent as a primitive and dangerous practice; (3) the twentieth century with its increased knowledge of the virus of smallpox and vaccinia, which regards inoculation as a necessary forerunner of vaccination. The enlargement of the scope of general history in the modern period to include intellectual, scientific and social history, while removing the utilitarian judgment inherent in a purely medical outlook, has introduced a new frame of reference for the selection of data. This in turn revises the interpretation of the facts once more and raises the question whether unchanging historical truth is possible.

LEMUEL SHATTUCK AND THE BOSTON WATER SUPPLY

JOHN B. BLAKE

Lemuel Shattuck of Boston has been widely honored as America's first statesman of the public health. It is therefore of interest to study his role in the agitation for improving the Boston water supply, which reached a climax in 1845. Existing sources were inadequate and sometimes polluted. One group of citizens wished to replace this supply with a municipal water works from Long Pond in Framingham, with a capacity of seven million gallons a day; they believed that the supply should not be subject to the control of private profit-seeking enterprise. Other citizens preferred to have a private corporation supplement the existing supplies with a much smaller aqueduct from Spot Pond in Stoneham. Shattuck actively supported the latter group, arguing that an additional supply of one million gallons a day would suffice for years to come, and that it would be financially disastrous for the city to undertake the aqueduct from Long Pond. In the event, the city did construct the Long Pond works, and the demand for water actually proved far greater than even the highest estimate. While Shattuck's record in this case does not enhance his reputation as a sanitary reformer of vision, this does not necessarily mean that he must lose his place of honor in the history of public health. But it does suggest the need for a critical study of his career. It illustrates the fact that one cannot always judge from a man's abstract statements how he will act in specific circumstances, and it reminds us that even our "heroes" can err.

THE DOCTORS MARCH TO ARMSBY IN ALBANY

E. C. Kelly

Medical education in Albany began with the arrival of Doctor Alden March in 1820; in 1821 he was giving a private course in anatomy for about fifteen students. He later joined the faculty of the Castleton Medical College in Vermont. As early as 1830 he was advocating publicly the establishment of a medical school and hospital in Albany. His brother-in-law, James H. Armsby, graduated at Castleton in 1833 and took over Doctor March's Albany course of lectures soon afterward. Both March and Armsby also gave popular medical lectures to arouse interest in medical education. After many petitions to the legislature, and after overcoming many obstacles, the Albany Medical College opened in 1839, with March as President and Professor of Surgery, and Armsby as Dean and Professor of Anatomy and Physiology. In his final illness in 1869, March was attended by Armsby. After March's death, a Dr. Charles A. Robertson publicly accused Armsby of maltreatment of his famous patient and brother-in-law, in order to inherit the presidency of the college. Armsby, in spite of criticism, was head of the medical college until his sudden death in 1875. Then funds were raised by alumni and friends to erect a monument to Armsby in Albany's Washington Park, where it still adds beauty to the landscape. In this age of speed, calumny is spread in slower and subtler ways than Robertson's.

THE BRITISH MEDICAL COUNCIL AND BRITISH MEDICAL EDUCATION IN THE NINETEENTH CENTURY

Ann Beck

The period between 1858 and 1886 has been called the Thirty Years' War for the reform of the General Medical Council of Education and Registration. The demand for reforms in medical administration and education is characteristic of the climate of opinion of the nineteenth century which initiated the transition from excessive liberalism to moderate government controls. Before the enactment of the Medical Act of 1858, it is probable that two out of three physicians were not formally qualified to practise medicine; and yet people could not understand why Parliament should have the right to interfere in medical matters. The system of control over medical standards and practices introduced in 1858 proved to be unsatisfactory for a number of reasons. Many bills for medical reform were introduced in Parliament between 1870 and 1886 until agreement was finally reached in the latter year. Throughout this period discussions on proposals for reform rose above the level of local politics to cope with the fundamental problems. People nevertheless questioned the desirability of centrally administered state controls of medical standards and licenses. They did not see the need for the protection of the public in the field of medicine. They feared that state supervision of medical education might lead to uniformity, a term which we would interpret as "thought control." But the determined efforts of the medical profession and the perseverance of the reformers led to the enactment of the Medical Act of 1886.

The Act fitted well into the nineteenth-century trend in England toward welfare legislation in the interest of the public.

BRITISH INFLUENCE ON AMERICAN MEDICAL EDUCATION DURING THE LATE 18TH AND THE EARLY 19TH CENTURIES

COURTNEY R. HALL

Attention was called to the large numbers of American medical students who studied in British centers, especially in the University of Edinburgh and the London hospitals between 1750 and approximately 1840. The number of these students, in the case of Edinburgh, was probably close to 300, and was perhaps nearly as great in the London area. Brief descriptions were given of some of the essential features of instruction at Edinburgh and in London, with examples of teacher-student relationships. The most important educational effects of this student residence in Britain were (1) the organization of the Colonial medical schools at Philadelphia and New York, and (2) of the post-revolutionary schools, such as Harvard, Dartmouth, Yale, and Transylvania. An important by-product of this medical educational movement was the beginning of instruction and research in the sciences, as chemistry, botany, and others. The educational contacts between Great Britain and America were continued in the 19th century by a new generation of American postgraduate medical students in Great Britain. In our early medical schools, methods of instruction, organization of departments, the selection of textbooks and the kind of equipment first used followed closely the example of the old British schools.

Thursday Afternoon, May 12, 1955: The Fielding H. Garrison Lecture

THE FIRST PRESCRIPTION IN MAN'S RECORDED HISTORY: A SUMERIAN CLAY TABLET FROM 2000 B. C.

SAMUEL NOAH KRAMER

As of today, the oldest collection of prescriptions in the history of man is inscribed in the cuneiform script and in the Sumerian language on a clay tablet, 3¾ x 6¼ inches, which is now in the University Museum in Philadelphia. To judge from the script, it was actually written about 2100 B. C. The tablet was excavated in Nippur, the cultural center of Sumer, some fifty years ago, and has been most recently studied and translated in large part by Martin Levey, a chemist specializing in the history of science and technology, and myself.

The Sumerian doctor, we learn from this document, went to botanical, zoological, and mineralogical sources for his materia medica. His favorite minerals were sodium chloride and potassium nitrate. From the animal kingdom he utilized milk, snake-skin, and turtle-shell. But most of his medicinals came from the botanical world, from plants such as cassia, myrtle, asafoetida, alkali, and thyme, and from trees such as the willow, pear, fir, fig, and date. These simples were prepared from the seed, root, branch, bark, or gum.

The remedies prescribed were both salves and filtrates to be applied externally, as well as liquids to be taken internally. In case of the salves, the instructions were usually to pulverize one or more simples, to infuse them with *Kushumma* wine, and then spread common tree oil as well as cedar oil over the mixture. The filtrate prescriptions were more complicated and were followed by directions for treatment. In case of the remedies which were to be taken internally, beer was usually the vehicle which made them palatable to the patient.

Disappointingly enough, the text fails to name the diseases for which the remedies were intended. Nor does it specify the quantities to be used in compounding the simples, or the dosage and applicating frequency of the medicine. In one respect, however, it stands out from many other ancient medical documents: it does not resort to magic spells and incantations; not one god or demon is mentioned in the text.

Thursday Evening, May 12, 1955: Symposium: The History of Hospitals

HIGHLIGHTS FROM THE HISTORY OF HOSPITALS

HENRY R. CARSTENS

During medieval times numerous hospitals were established in Europe as a manifestation of a charitable Christianity. Many are still operating, some still occupy their original buildings. Impetus was given by (1) the Crusades, (2) the spread of leprosy and the plague. Many were established by the Order of the Holy Ghost founded in 1204 by Innocent III. Other orders (Lazarites etc.) also participated. France has the two oldest, the Hôtel Dieu in Lyons (*ca.* 562) and in Paris (*ca.* 651). Present buildings are of the 18th century and later. The Hôtel Dieu in Beaune, completed in 1452, is the oldest occupying its original buildings. In Paris are the Hôpital des Quinze-Vingts (1260) for 300 blind, the Hôpital St. Louis (1607) for plague victims, and others. The oldest Italian hospital is S. Maria della Scala, Siena, (*ca.* 898), buildings of the 13th century and later. The oldest in Rome is the Ospedale di Santo Spirito (1204). In Milan, the Maggiori (1451) is now a city hospital. Florence has many ancient hospitals, S. Maria Nuova, Bonifazio, etc. The Ospedale degli Innocenti, completed in 1444 as a foundling home, occupies its original buildings. Germany, too, has many, mostly modernized, in Wuerzburg, Nuernberg, Hamburg, etc. The Almshouse in Luebeck was established in 1240; the buildings on its present site date from *ca.* 1400. There are others in Rothenburg and Dinkelsbuehl, some with sixteenth-century buildings. In London, St. Bartholomew's (1123), St. Thomas's (1215) are great modern teaching hospitals. In the English provinces, many of the almshouse type still survive. The oldest is St. John's in Canterbury (*ca.* 1044). The St. Cross in Winchester (1136) occupies charming buildings of the 12th to 14th centuries.

SOME HISTORICAL ASPECTS OF HOSPITAL PHARMACY

ALEX BERMAN

The vigorous evolution of professional pharmacy on the European continent is chiefly traceable to the early separation of pharmacy and medicine (Statutes of Arles, 1160-1202, and the edict of Emperor Frederick II). In England, the apothecary, functioning as a dual practitioner of medicine and pharmacy, effectively blocked the emergence of a purely professional pharmaceutical body of practitioners in the continental tradition until well into the 19th century. Apothecaries in English hospitals were supplanted relatively late by pharmacists, e. g., at the University Hospital, London, in 1868, and at Westminster as late as 1876. For a short time, early hospitals in this country followed the English pattern quite closely, employing apothecaries with medical and pharmaceutical functions. These apothecaries were replaced in the course of the 19th century by individuals somewhat analogous to the English hospital dispensers and possessing varying degrees of training and education. It was only in the 1920's that hospital pharmacists in the United States became articulate enough to strive for organization and higher educational standards. During the last 15 years, hospital pharmacy in this country has made spectacular progress. A national organization, the American Society of Hospital Pharmacists, was formed in 1942, and has been a major force in promoting higher educational standards, in instituting internship programs for hospital pharmacists, and in holding annual national training Institutes for its members. In contrast to the American tradition, there has been in France a long-standing and intimate relationship between hospital pharmacy and the school of pharmacy. An internship program was established for the hospitals of Paris as early as 1814. Traditionally, the élite of French pharmacists have been recruited from among French interns in pharmacy, many of them having become members of various pharmaceutical, medical, and scientific societies. Not only have many great French pharmacists come from hospital pharmacy, but virtually half the Faculty of Pharmacy of Paris today are hospital pharmacists. The Chair of Pharmacology at the Faculty of Medicine, established in 1853, has always been occupied by a hospital pharmacist, except for the period from 1892 to 1922.

A HISTORY OF CHILDREN'S HOSPITALS

SAMUEL X. RADBILL

The institutional care of children has followed closely the general hospital trends and the various movements on behalf of human welfare. At first communal care of the sick and infirm was a part of the solicitude for persons needing aid and shelter for any reason at all. Because of the peculiar situation in regard to children, who were apt to be an insuperable burden to their parents for moral, economic, or other reasons, pagan and early Christian institutions first arose to care for foundlings, waifs, and orphans. These institutions were known as brephotrophia and orphanotrophia and seem to have been largely replaced by the foundling homes. Because of insufficient financial aid, inadequate nursing, generally low

hygienic standards, faulty medical knowledge, and a lack of high regard for the mundane survival of the children of sin, the foundling homes could boast more about spiritual salvation for those who came under their care than of child welfare in the modern sense. During the latter half of the eighteenth century reforms were instituted for the improvement of hospital care in general hospitals. Institutional care for children, however, seemed undesirable at the time; instead, outpatient care was introduced by George Armstrong in England and by Joseph J. Mastalier, eighteen years later, in Austria. Their aim was not only cure of sick children but also study of the management of both the well child and the sick, with wider dissemination of knowledge thus gained through teaching and medical literature. This proved valuable, but in-patient care was still necessary before real advances in pediatrics could be made. At the beginning of the nineteenth century the first hospital for sick children was opened in Paris and three decades later the second. Children's hospitals sprang up in rapid succession throughout the world during the rest of the nineteenth century. This led to the development of pediatric teachers, pediatric literature and the training of pediatricians. From the specialist hospitals of the nineteenth century, the present era of medical specialism was developed, pediatrics being one part of the movement.

HOSPITALS, MEDICAL CARE AND SOCIAL POLICY IN THE FRENCH REVOLUTION

George Rosen

By the end of the 18th century there was a recognition among most Frenchmen of a need for change in social organization to deal effectively with problems of welfare and health. This was one aspect of the situation with which the revolutionary governments had to deal. The Constituent Assembly set up a Committee on Mendicity, which prepared a plan, but the Assembly adjourned without taking any action. No further action was taken by the Legislative Assembly. The convention finally passed a series of laws dealing with welfare, medical care and hospitals, but they were not completely implemented. The ideas developed in these efforts influenced France profoundly, and provided one of the sources of the concept of social medicine in the 19th century.

Friday Afternoon, May 13, 1955: Symposium: Philosophy and Medicine

PHILOSOPHICAL PRESUPPOSITIONS OF PRESENT DAY MEDICINE

Walther Riese

An epistemological attempt was made to uncover the philosophical presuppositions of contemporary medicine, as they are implied in the physician's major actions: interrogation, diagnosis, prognosis, and therapy. A profound change is embodied in the recent shift from interrogation to interview, the new reciprocity of physician and patient, and the involvement of the physician in this interpersonal process.

Diagnosis, though gaining in fullness and breadth through the contributions made by the basic sciences, and thus becoming increasingly multidimensional, is becoming at the same time increasingly ambiguous, since there are no criteria for objective evaluation of the relative importance of each of the constituents of diagnosis. Similar problems emerge in the various therapeutic procedures in use, all of which can be traced back to as many attempts to modify one or more of the constituents of the picture of a given disease, i. e. diagnosis. Certain types of treatment intended to bring relief with a minimum loss of time and instigated with the patient's willingness, if not eagerness, to pass into coma and to sacrifice his physical integrity, may be interpreted as significant of our time, its interhuman and social implications, its anxieties and escapes. In contrast to diagnosis, only a relatively minor place is left to prognosis in contemporary teaching and practice. In contrast to the aggressive mode of therapy, physical as well as psychical, almost no room seems to be left to spontaneous recovery. Death, and the various physiological, psychological, and metaphysical problems which it implies, seem to have ceased to be subjects of major interest to the contemporary physician. Finally, the structure of contemporary medicine as a whole and the qualification of medicine to be called a science were discussed.

ALCHEMY, PHILOSOPHY AND MEDICINE

Victor A. Rapport

Alchemy is the connecting link between philosophy and modern medicine. The roots of alchemy and of scientific medicine are found in the Taoist philosophy of China (6th century B. C.), which held that all matter, animate and inanimate, was of the same nature—only the form was different. Chinese alchemy dealt with prolongation of life and transmutation of metals. These philosophical and alchemical ideas were transmitted to the Alexandrian Greeks, and in turn to the Arabs, who carried them to western Europe. As the Arabs laid the foundation of modern medicine in Europe, they held to the philosophical ideas of early alchemy, particularly that of a *prima materia*, a fundamental substance from which all *forms* of matter come. The transmutation of metals was, thus, only an empirical demonstration of this fundamental principle; if the secret could be discovered, eternal life could be achieved as readily as gold could be produced from mercury. In the early 16th century, Paracelsus begins the development of iatrochemistry, whose basic doctrine was, or became, that the healthy human body is a particular combination of chemical substances, with illness the result of some change in this combination, and curable only by chemical medicines. Alchemy continues to hold the minds of investigators up to the middle of the 17th century. From that point onward, it is largely in the hands of charlatans. But in the 20th century, alchemy again contributes to the development of medical knowledge with the work of C. G. Jung, who finds in it the key to his concept of individuation.

ON THE INTERRELATIONSHIP OF THE HISTORY AND PHILOSOPHY OF MEDICINE

OWSEI TEMKIN

Philosophy of medicine can indicate a broad line of thought about medicine in general; it can also be meant to deal with the logic, ethics, and metaphysics of medicine. The author cites Osler and Neuburger as examples of a connection of medical history with philosophy in the former sense. Osler cultivated the history of medicine as an expression of his "Way of Life," while Neuburger looked for the common philosophical denominator of medicine and civilization. From a stricter philosophical point of view, history and philosophy must be separated as to their aims. Understanding of the historical development of medical concepts and ethics cannot substitute for philosophical judgment. However, historical study can make the philosopher aware of the modes of thought in medicine that are different from ours. In particular this concerns the different picture other periods had of man in health and disease. These different pictures are not mere moments in a progressive development. If the philosopher attempts to evaluate metaphysical roots of medicine, he goes beyond the legitimate concern of the historian.

Saturday Morning, May 14, 1955: General Session

BIOPHYSICS: 1847 AND TODAY

PAUL F. CRANEFIELD

In 1847 Ludwig, Helmholtz, Du Bois Reymond and Brücke met and formulated their famous program to "constitute Physiology on a chemico-physical foundation." American physiology is heavily derivative from these men, in particular from Ludwig. It is therefore rather surprising that in 1930 the climate of American physiology was uncongenial to biophysics, to the point where training in physiology emphasizing physics, physical chemistry, and mathematics was rather rare, and men having such training were not encouraged in physiology. At about this time the movement toward an independent biophysics in this country began, recruiting many of its followers from men trained in physics rather than from men trained in physiology. Generally speaking this biophysics was new in the sense that it was not a revival of the 1847 program but a new endeavor. How can these attitudes of American physiology be reconciled: on the one hand a firm feeling of being followers of Ludwig and Helmholtz and on the other hand a lack of sympathy for biophysics? The answer lies in the fact that the 1847 group operated on two levels: one level was that of a philosophy of biology, an assertion that vital processes are capable of explanation in physico-chemical terms; the other level was one of empirical research using physical methods, but not too much dependent on the philosophy. The work done by the 1847 group does not differ in method or spirit from that of E. H. Weber or the vitalist Haldane. It is this fruitful experimental method which came to dominate American physiology. At the same time that the 1847 group grew away from their philosophical goals,

since they had no hope of reaching them, there was growing up an attitude of measurement and mathematical manipulation for its own sake which led to a discrediting of the idea of biophysics. It was therefore logical that physiologists could regard Ludwig as their master and yet reject biophysics, and understandable that the subject should need to be reintroduced by men who were to some extent outside of classical physiology.

THE THEORY OF CAUSALITY IN PRIMITIVE AND MODERN MEDICINE

ANDERSON NETTLESHIP

When natural phenomena are perceived, the mind seeks recognition of a power adequate to account for each occurrence. The primitive mind accounts for disease by visible physical forces or spirits. Starting with this early idea, modern medicine has evolved strict logical canons which operate through deterministic causality to produce a mechanics of disease. When too close an interpretation is placed upon cause-effect relations, acting in disease processes, many biological phenomena escape explanation. The great complexity of disease processes has tended to enforce the principles of classical physics upon the macrocosmos of disease. Quantum physics states the possibility that observational science produces uncontrolled disturbances in natural phenomena which make it impossible to describe them in a fully deterministic sense. This is a limitation of knowledge about disease which makes it necessary for statistical evaluation to be made in understanding disease reality. Neither the concepts of classical mechanics or quantum physics should be put upon all biological phenomena, lest the order of certain occurrences be misconstrued. Instead, disease should be thought of in terms of abnormal occurrence in a normally progressing system in which time is incorporated. Hence the need for emphasis upon cell, organ, tissue; causative mechanical concept may be discarded in favor of a non-fixed, non-deterministic approach which considers the normal human being as an open system in an area of order (negative entropy) in which, when disease occurs, disorder and an increase of entropy are brought about.

THOMAS BOND: FIRST CLINICAL PROFESSOR OF MEDICINE

ELIZABETH H. THOMSON

Thomas Bond (1712-1784), one of the most able and important Colonial physicians and close friend of Benjamin Franklin, was born in Maryland and entered practice in Philadelphia in 1732. His medical education, begun in Philadelphia, was continued abroad, largely at the Hôtel Dieu in Paris. Bond soon won a reputation as a sound internist and skilful surgeon, his practice characterized by clinical acumen, moderation and good common sense. Many of Philadelphia's distinguished citizens were among his patients. But it was as a teacher that Bond was most influential in molding eighteenth-century thought. In 1751 he, with Franklin's assistance, founded the Pennsylvania Hospital, the first institution solely

for care of the sick in the Colonies. He was instrumental in establishing a medical library at the Hospital and became the first clinical professor of medicine, when he inaugurated bedside teaching in 1766 for students of the newly founded (1765) medical school. His introductory lecture on "The Utility of Clinical Lectures" is justly celebrated for its wisdom and vision. A founder and long Vice-President of the American Philosophical Society, Bond was also an original trustee of the Academy which became the University of Pennsylvania, served as physician to the Almshouse (later the Philadelphia General Hospital), as city coroner and port inspector. Like Franklin, he served as gracious liaison between scientists of the New World and the Old through all his later years.

HISTORY AND FUTURE OF SALVAGING MILITARY RECRUITS WITH EYE DEFECTS

Roland I. Pritikin

The American medical profession has sometimes incurred blame because an appreciable number of otherwise healthy young men were rejected for military service during World War II, owing to failure to meet the visual requirements. We find among these one group having hereditary and congenital defects so far considered incurable. More can be done for recruits with eye defects that bar them from military service or cause their dismissal after they are inducted. In the case of the latter, we are concerned with conditions which are not immediately discovered on checking central visual acuity. To analyze all of the various conditions that recruits may have, we must study not only the patients, but the origin of their condition. The geographical origin of congenital and hereditary eye conditions must be thoroughly reviewed. The laws of heredity, as they apply to these conditions, must be understood. Dominant, recessive, and sex-linked factors should be evaluated and classified. This is necessary, not only for the prophylactic treatment, but also to understand the advice to be given to individuals with various congenital and hereditary conditions that have eye findings. The capabilities of treatment with radioactive substances, radiological equipment, electricity and light rays, and biochemical solutions, and treatment with chemotherapeutic, antibiotic, and adrenocorticotropic drugs, should be evaluated for future use.

REMARKS ON THE HISTORY OF GOITER IN SPAIN AND AMONG JEWS

Isidor Greenwald

About 1600, the Spaniards in Bolivia recorded swellings in the neck among natives and later among Europeans. They did not recognize these as having been seen in Spain, but adopted the native word, "coto," which originally meant heap or bunch. Later, they used "papera," as in Spain, indiscriminately for goiter, mumps and other swellings in the neck. They recorded that many died of "paperas." Reference to Spanish dictionaries and to other literature indicates that goiter was

not recognized in Spain, except in the extreme northwest, until the nineteenth century. It is now widespread. Las Hurdes, now notorious for its goiters and cretins was said in 1891 to have few goiters and no cretins. In earlier descriptions, of 1780 and 1876, neither was mentioned. There is one reference of the fifteenth century to what appears to have been endemic goiter in a Spanish city. This is in Hebrew and uses the word "zephek" (the crop of a bird) as the name of a condition in Buitrago (?) due to bad air or water. This seems to be the only reference to goiter in all published Hebrew literature. (Zimmels: *Magicians, Theologians and Doctors.* London, 1952, and personal communication.) In 1827, goiter was common in Metz but not among the Jews. The Société de Médecine set the question, "Pourquoi la femme juive est-elle exempte du goitre?" A century later, Taylor noticed that goiter was much less frequent among Jewish children in Manchester, England, than among others attending the same schools. This freedom from goiter is not universal, for goiter has been found among Jews and was quite common in parts of Poland in 1910.

THE MYSTERY OF CHARLES ESTIENNE IN PRE- AND POST-VESALIAN ANATOMY

G. Kasten Tallmadge

Charles Estienne of Paris commenced work upon his *De Dissectione Partium Corporis Humani* not later than 1530. We know this because the earliest dated full-page woodcut of the sixty-three in his volume is dated 1530. The volume is in three books; the author states in his introduction that the work had been printed up to the middle of Book III when it became necessary to suppress it until others could form new opinions upon anatomy. This presumably was the effect of the discoveries of Vesalius, who had been a fellow student of Estienne's at Paris, 1533-1536. Most, but not all, of the plates after page 160 have been altered. These plates were begun by Geoffroy Tory, who died in 1533. One of them bears his device alone; four others bear his device, but also the cipher of Mercure Jollat. It is presumed, therefore, that Tory was unable to complete the plates, and that Jollat finished those incomplete, and made the rest. There are three of these which bear his monogram; the rest are unsigned. The absence of a signature bears no more weight in proving that they are not the work of Jollat than it does in proving that they are the work of another artist. Estienne's work never attained the popularity of that of Vesalius. The reason for this is probably that the illustrations, although artistic, are less anatomically utilitarian.

ANATOMICAL FLAP ILLUSTRATION, XVIth TO XXth CENTURY

Fred W. Faust

The idea of an overlaid flap technique in illustration as an attempt to represent the inner parts of a three dimensional subject in the form of cross-sectioned layers has had a long history beginning in the early XVIth century. It was first applied in the fugitive sheets published in 1539. Vesalius seems to have been impressed

with this new method of illustration, for in both the *Fabrica* and the *Epitome* he provides pages with figures to be cut out and pasted upon the vein figures. The same technique was used by Leonhart Thurneisser in his book on urinanalysis, *Confirmatio Concertationis*, which he printed in his own establishment in 1576. Georg Bartisch, a reformer of surgery of the eye, applied the flap procedure in two of the 86 woodcuts with which he illustrated his *Ophthalmodouleia, das ist Augendienst*, 1583. Several other volumes published during the XVIIth century contain flap illustrations, among which Remmelin's *Catoptrum Microcosmici*, 1619, became the most popular of all books of this type ever published; in later years it was often copied and imitated. In 1720 von Hellwig printed his *Nosce te Ipsum*, the last poorly done imitation of Remmelin's work. Tuson, an English anatomist, published in 1825 a textbook on muscle under the title *Myopolyplasiasmus*, an excellent example of well-done flap technique. This is the first book to use superimposed layers to represent all the muscles of the human body. At the turn of the XIXth century and during the years following, flap illustration was commonly used in anatomical teaching. During the past decade, several pharmaceutical houses have issued little booklets on human anatomy, which contain several transparent superimposed pages. The principles of this technique have been adopted by industry to demonstrate the inner mechanism of various machinery. Its value as an aid in anatomical teaching is doubtful. This technique can never replace dissections and tends to confuse; when used in books it makes the volumes bulky and awkward to handle. It is difficult for students to comprehend the exact location of the organs, muscles, and other structures of the body. However, its use in illustrating pathological appearances has without doubt some value in teaching.

SIR WILLIAM OSLER IN THE MIDWEST

WILLIAM WHITE

An account of Sir William Osler's travels, lectures and relationships in midwestern America includes three addresses in Minneapolis, St. Paul, and St. Louis; associations, both personal and through correspondence, with Doctors Jesse S. Myer, Henry V. Ogden, Paul G. Woolley, W. Baumgarten, W. E. Fischel in St. Louis, Milwaukee, Cincinnati, and others elsewhere—all of which typifies what he tried to do in teaching medicine and what he stood for in the profession during his career. At the opening of the University of Minnesota medical buildings in 1892 Osler talked primarily to students on their education and the attitudes they should adopt: detachment, method, thoroughness, humility. This essay, "Teacher and Student," Cushing calls one of his most effective. "The License to Practise," delivered in St. Paul the day after his talk in Minneapolis, dealt with a favorite topic: laxity in the matter of registration in the United States, the only country which thinks the doctorate carries the license to practise. He suggested the adoption of the Canadian plan, calling for the election of a medical parliament by doctors to control medical affairs. Osler's best known address in the midwest, read in St. Louis in 1902, was on William Beaumont. Both historically and as a delightful literary essay, this short piece on the U. S. Army Surgeon and "that

old. fistulous" Alexis St. Martin shows Osler at his prime: it is still read in the recent (1951) *Selected Writings of Sir William Osler.* W. O. encouraged and stimulated, among others, Myer—who eventually did a biography of Beaumont—and his activities were never confined to one area, geographically, personally, or Daniel Drake for Cincinnatians—just as he was always arousing the interest of people in different localities in their medical worthies. Gregarious, energetic, peripatetic, Osler went far beyond the dictates of his teaching and consultation, and Ogden in their scientific and literary pursuits; and he tried for years to promote professionally.

TEXTS AND DOCUMENTS

AN ANCIENT COMMENTARY ON THE HIPPOCRATIC OATH

FRANZ ROSENTHAL

The existence, in Arabic, of references to a *Commentary on the Hippocratic Oath* ascribed to Galen has been known to Western scholars since the seventeenth century. The *Annals* of the Christian Arab historian Eutychius, published by J. Selden and E. Pocock in Oxford in 1658, contained a short quotation from it (see below, fragment B 3 a).[1] But already in 1639, the large Asclepius fragment, from Ibn Abi Uṣaybi'ah's great *History of Physicians,* was about to be published and translated by the physician and pioneer Arabist J. Elichmann. Unfortunately, Elichmann did not live to complete his project, and only a small part of the text (cf. below, lines 3-6 and 24-50 [. . . adorns it] of fragment B 2 c), was printed at the time.[2]

No more extensive fragments than those preserved by Ibn Abi Uṣaybi'ah are known to this day. They were translated into French by B. R. Sanguinetti just a century ago.[3] Sanguinetti had no special interest in the passages from the *Commentary* but happened to come upon them while translating long sections from the beginning of Ibn Abi Uṣaybi'ah's work. Therefore, he paid little attention to the Greek sources and significance of the *Commentary.* His publication, which would have caused a sensation in the scholarly circles of an earlier date, passed practically unnoticed, and references to the *Commentary* have been infrequent in subsequent years.[4]

[1] The scholarly occupation with Eutychius dates back to the early years of the seventeenth century, cf. C. F. de Schnurrer, *Bibliotheca Arabica* 144-47 (Halle 1811).

[2] In *Joh. Beverovicii epistolica quaestio de vitae termino, fatali, an mobili? Cum doctorum responsis. Pars tertia, et ultima. . . . Seorsim accedit. . . . Item eiusdem argumenti alia, à Joanne Elichmanno, M. D., ex mente & monimentis Arabum & Persarum contexta* 150-52 (Leiden 1639). Cf. my remarks in *Orientalia N. S.* 10, 107 f. (1941). A copy of the work is preserved in the New York Academy of Medicine (catalogue no. S.117).

On the basis of Elichmann's work, the *Commentary* was briefly referred to in one of the later editions of D'Herbelot's *Bibliothèque Orientale* 480 f. (Maestricht 1776), *s. v. Ketab alaiman,* an entry which is not found in the first edition (Paris 1697). Cf. also J. Fabricius, *Bibliotheca Graeca,* ed. by G. Ch. Harles, *2,* 589 f. (Hamburg 1791), and J. G. Wenrich, *De auctorum Graecorum versionibus* 104 (Leipzig 1843).

[3] In *Journal Asiatique,* V, *3,* 242-47, 252, 267; *4,* 195-204 (1854).

[4] Cf., for instance, M. Steinschneider, "Al-Farabi," in *Mémoires de l'Académie des*

For a long time, I had been hoping that the complete text of the work might be discovered, and since the treasures preserved in Arabic manuscripts are as yet imperfectly known, this hope might still come true. However, no manuscript has so far become available, and many of the old difficulties remain. Nevertheless, the preserved fragments are, it seems, unique documents of Antiquity in many respects, and they inform us about an important chapter in the study of the history of medicine. They are thus sufficiently interesting to warrant their renewed collection and the study of the problems of authorship, textual history, and meaning connected with them. The collection and translation of the fragments is the proper task of the Orientalist and has been attempted in the following pages. Their final analysis remains the task of the historian of medicine and the classicist. The few remarks made here in this direction were necessitated by the fact that without a knowledge of the sources, a correct translation is often impossible, and they are tentative in every respect.[5]

A. TESTIMONIA.

1. Ḥunayn b. Isḥâq, *Risâlah*, no. 87 (ed. by G. Bergsträsser, in *Abhandlungen für die Kunde des Morgenlandes* vol. 17, no. 2, 1925).

The statement from Ḥunayn's work is reproduced, in a somewhat shortened form, in *Fihrist* $288_{9f.}$ Flügel; 401 (Cairo 1348), and al-Qifṭî $94_{10f.}$ Müller-Lippert. In Ibn Abî Uṣaybi'ah 1, 99_2 Müller, the passage is reduced to the mere title and the remark that the work consisted of one book. No reference to the *Commentary* is found in Ḥunayn's brief treatise on the works which Galen did not mention in his *Pinax* (ed. by G. Bergsträsser, in *Abhandlungen für die Kunde des Morgenlandes* vol. 19, no. 2, 1932).

The form of the title used here by Ḥunayn is the most authentic one there is. However, in introducing the fragments, the various later authors use slightly different forms which are easily recognized in the literal translations given them in the following pages.

Sciences de St. Pétersbourg 1869, 174, fn. 35; *idem*, "Die arabischen Übersetzungen aus dem Griechischen," in (*Virchow's*) *Archiv für pathologische Anatomie 124*, 119 (1891); G. Bergsträsser, *Ḥunain ibn Isḥâḳ und seine Schule* 24 f., 73-75 (Leiden 1913), who includes a detailed investigation of the linguistic character of the fragments in Ibn Abî Uṣaybi'ah; M. Meyerhof, "Über echte und unechte Schriften Galens nach arabischen Quellen," in *Sitzungsberichte der Preussischen Akademie der Wissenschaften, phil.-hist. Kl.* 1928, 538.

[5] It occasionally proved necessary for me to confess that I did not know a Greek parallel for some detail or doubted its accuracy. Such statements were made after as much research and reflection as I was able to devote to the points in question. However, everybody who has ever worked on Graeco-Arabic literature must have had the same experience at one time or another: Statements that at first glance look "un-Greek" and like an incontrovertible proof of the alleged Muslim ignorance of things Greek, turn out to be literal translations of some Greek original. Thus, under further scrutiny, my negative statements might easily become liable to revision.

The words *sharḥ* and *tafsîr*, both meaning "commentary," are used interchangeably; once, they are both used together in the title (fr. B 3 b).

The plural "covenants (*'uhûd*)" is used by al-Bîrûnî (fr. B 2 a, B 2 b, and B 3 c). Instead of "covenant," the word "oaths (*aymân*)" is used in fr. B 1 b, B 1 c, B 3 b, and B 3 g. "Oaths and covenant" appears together in fr. B 2 c and B 3 a. The seventeenth-century bibliographer, Ḥâjjî Khalîfah (*Kashf az-zunûn*, no. 9928, **5**, 57 Flügel), used "oaths." The use of two words goes back to the title of the Arabic translation of the Hippocratic *Oath*.

His (Galen's) *Commentary on the Book of the Covenant* (*'ahd*) *of Hippocrates*: This work consists of one book (*maqâlah*). I translated it into Syriac, adding a commentary of my own on passages considered difficult. Ḥubaysh translated it into Arabic for Abû l-Ḥasan Aḥmad b. Mûsâ. It was also translated by 'Îsâ b. Yaḥyâ.[6]

B. FRAGMENTA.

1. On the origin of medicine.

a. Ibn al-Maṭrân, *Bustân al-aṭibbâ'*, as quoted by Ibn Abî Uṣaybi'ah 1, 6_{15} ff. Müller; transl. in *Journal Asiatique* V, **3**, 252 (1854).

The text does not appear in the manuscript of Ibn al-Maṭrân's work consulted by me, Army Medical Library (Cleveland, Ohio), ms. A 8 (cf. D. M. Schullian and F. E. Sommer, *A Catalogue of Incunabula and Manuscripts in the Army Medical Library* 299, New York, n. y. [1948]). This throws some doubt upon the accuracy of Ibn Abî Uṣaybi'ah's reference. However, the *Bustân al-aṭibbâ'* is a collection of unconnected quotations and discussions, and our passage might have been omitted from the manuscript by accident, or it might have belonged to another recension. The content agrees with the detailed discussion in fr. B 1 b.

Ibn al-Maṭrân said: This statement (on the origin of medicine as quoted by Ibn al-Maṭrân from Abû Jâbir al-Maghribî)[7] is all disorganized and confused, even though Galen said in his *Commentary on the Covenant* that this craft is revelational and inspirational.[8]

b. Ibn Abî Uṣaybi'ah 1, 4_{14}-5_{16} Müller; transl. in *Journal Asiatique* V, 3, 242-47 (1854).

The identical text appears in Isḥâq b. Ḥunayn, *Ta'rîkh al-aṭibbâ'* (ed. by F.

[6] Both translators are well known as members of Ḥunayn's school of translators; Ḥubaysh also was the son of his sister. For 'Îsâ, cf. also P. Kraus and R. Walzer, *Galeni Compendium Timaei Platonis* 18-20 (London 1951, *Plato Arabus* 1).

The person for whom Ḥubaysh made his translation is often mentioned by Ḥunayn as one of his sponsors. He is one of the Banû Mûsâ and a brother of Muḥammad b. Mûsâ, for whom Ḥunayn likewise produced many translations, cf. M. Meyerhof, in *Isis 8*, 714 f. (1926).

[7] No information is available about this man. For no conceivable reason, Sanguinetti identified him with the alchemist Jâbir (Geber).

[8] That is, belonging to, or derived from, revelation and inspiration.

Rosenthal, in *Oriens* 7, 62_{8}-64_{2}; 73 $_{19}$-74_{bottom}, 1954). There are only slight divergences, in particular, some statements not found in Isḥâq's work. Isḥâq obviousiy used the *Commentary* as his source for this part of his work, though he does not mention it. I had previously thought that Ibn Abî Uṣaybi'ah had wrongly attributed the fragment to the *Commentary*, while actually using the *Ta'rîkh al-aṭibbâ'*; this, however, is impossible.

Fihrist 286 Flügel; 398 (Cairo 1348), and al-Qifṭi 11_{4-11}, 92_{9-20} Müller-Lippert, derived their information from Isḥâq b. Ḥunayn, while Ibn Abî Uṣaybi'ah used the *Commentary* directly; he may have depended upon some lost intermediary, but this seems unlikely. The text is no accurate quotation, as is fr. B 2 e, cf. fn. 9.

In his *Commentary on the Book of the Oaths by Hippocrates,* Galen mentioned that the investigation, among the ancients, concerning the first inventor of the craft of medicine was not an easy one. Let us first begin with setting down what he has mentioned, together with our additions to it,[9] for the purpose of giving a complete survey of all those different opinions. This is as follows:

The opinions concerning the invention of medicine are divided into two primary sections. Some people say that it is primeval, and others that it is created.[10] Those who believe in the createdness of the bodies say that the craft of medicine is created, for the bodies for which medicine is employed are created. Those who believe in primevalness believe in primevalness as far as medicine is concerned and say that the craft of medicine is primeval and has never ceased to be, since it is like one of the primeval things that have never ceased to be [like the creation of man].[11]

The opinions of the representatives of (the theory of) createdness are (again) divided into two sections. Some of them say that medicine was created together (i. e., at the same time) with man, since it is one of the things that constitute the well-being of man.[12] Others, and they are the majority, say that medicine was invented afterwards.

[9] It seems that Ḥunayn is speaking here, referring to his additions. It remains doubtful how far Ḥunayn's additions, and possibly even some outside material, have been merged with the text of the *Commentary* in this fragment. It should be noted, however, that some of the passages which are most suspect of being Ḥunayn's additions or outside material were omitted by Ḥunayn's son, Isḥâq, in his *Ta'rîkh al-aṭibbâ'*. This is proof that Isḥâq knew them to be additions to the original text.

For passages that do not seem to belong to the *Commentary*, cf. below, fn. 13, 16, 18, 21, 22, 23, and 24.

[10] The statement that medicine always existed, even before the creation of man, is remarkable and to my knowledge not attested elsewhere in classical literature.

[11] The words enclosed in square brackets appear to be a variant reading, inserted in this place by mistake, of the words "created together with man" found in the next paragraph.

[12] Cf. Proclus, *In Platonis Timaeum* 32 E (*2*, 63 f. Diehl), as translated by E. J. and L.

Those (latter) are again divided into two sections. Some say that God gave (the craft of medicine) to mankind through inspiration. The representatives of this theory follow the opinions of Galen, Hippocrates, all the Theorists, and the Greek poets.[13] Others say that man invented it (himself). They are the Empiricists, Methodists, Thessalus the Sophist,[14] and Philinus.[15]

They (again) differ with regard to the place where it was invented, and how it was invented. Some say that the people of Egypt invented it. They confirm this (assumption) through (the story of) the drug which is known in Greek as *elenî* (*helenion*), that is, elecampane (*râsan*).[16]

Edelstein, *Asclepius 1*, 154 f., fr. 314 (Baltimore 1945): ". . . wherefore the theologians ascribe to Asclepius the one kind of health, namely that which results from the whole process of healing whatever is contrary to nature . . . ; the other kind of health they (sc., the theologians) assume to have been created before Asclepius and to be coexistent with the creation of things, which they derive from Peitho and Eros because everything comes from reason and necessity. . . . The demiurge, as is clear from this, is the source of health, of the Asclepiadic as well as the demiurgic."

[13] Galen's alleged opinion on the problem may be studied in the *Introductio* ascribed to him (*14*, 674 Kühn; Edelstein, *Asclepius 1*, 184 f., fr. 356): "The Greeks ascribe the invention of the arts either to the children of the gods or to certain men akin to them to whom the gods first imparted every art. Thus also the art of medicine, they say, Asclepius first learned from Apollo, his father, and transmitted it to mankind; for this reason he is believed to be the discoverer of it. Before the time of Asclepius, the medical art did not exist among men, but the men of old had some experience with herbs and drugs. . . ."

The role of Asclepius as a divine or semi-divine transmitter or inventor of medicine was generally recognized and accepted in Antiquity; the Empiricists and Methodists would have hardly denied it, nor would it have been necessary for them to do so. It is, however, quite logical to ascribe to Theorists the belief in a divine origin of medicine, and to describe Empiricists (and Methodists) as stressing the human share in the invention.

The express reference to Galen shows that this passage cannot have been derived from the work ascribed to him. It may go back to Ḥunayn's notes. In fact, in the *Ta'rîkh al-aṭibbâ'*, Isḥâq b. Ḥunayn omitted this sentence as well as the concluding sentence of the paragraph, certainly because they did not belong to the original *Commentary*.

[14] Thessalus, the well-known leader of the Methodist school, is called here *al-mughâliṭ*, literally: "The person who tries to lead someone else into error." He might owe this unflattering epithet to the invectives hurled against him by Galen (cf. *De methodo medendi 10*, 7 ff., 124, 250 ff. Kühn; *De compositione medicamentorum per genera 13*, 393 Kühn). One of those epithets might have been rendered by the Oriental translators through *mughâliṭ*. There also is a passage in Galen, *De atra bile 5*, 105 Kühn, in which he accuses some of the Methodists of using *sophismata*.

Otherwise, it is tempting to assume a corruption within the Arabic text. *Al-ḥiyalî*, meaning "Methodist," was misread *al-jadalî* "dialectician, sophist," and *al-jadalî*, then, was replaced by a word of a corresponding meaning, namely, *al-mughâliṭ*.

[15] The Arabic letters more closely correspond to Philon, but Philinus fits the context as a famous Empiricist, cf. Pseudo-Galen, *Introductio 14*, 683 Kühn. The identification with Philinus was already suggested by Sanguinetti.

[16] This information ultimately goes back to the verses *Odyssey 4*, 227 f. about Helen

Others say that Hermes invented all the crafts and philosophy and medicine.[17]

Others (again) say that the people of Cos (?)[18] invented it with the help of the drugs which the midwife composed for the wife of the king and by which she was cured.

Others (again) say that the people of Mysia and Phrygia invented it, for those people were the first to invent flute (music).[19] With those

in Egypt being taught the knowledge of effective drugs. The commentaries on Homer and later Greek authors maintain that the *helenion* was named after Helen. The detailed story alluded to appears to be the one reported subsequently, cf. below, fn. 26. The duplication may again betray the influence of Ḥunayn's notes. This, however, is uncertain, since Isḥâq b. Ḥunayn, at least, preserves the repeated reference.

The Egyptian invention of medicine is advocated in the catalogue of first inventors in Clement of Alexandria, *Stromateis* I, XVI, 75 (*2*, 48 Stählin; Edelstein, *Asclepius 1*, 185 f., fr. 358), and elsewhere.

Cf. also 'Ubaydallâh b. Bukhtishû', *ar-Rawḍah aṭ-ṭibbîyah* 55 (Cairo 1927).

[17] On Hermes as a physician, cf. S. Eitrem, in Pauly-Wissowa, *Real-Encyclopädie 8*, col. 788, *s.v. Hermes*. According to an isolated report, the god was connected with Hygieia, cf. Cornutus, *Theologiae Graecae Compendium* 16 (p. 21 Lang). Cf. also, Galen, *Protrepticus 1*, 4 Kühn: *Hermên . . . ergatên . . . technês hapases.*

The Hermetic tradition associating Hermes and Asclepius may have contributed to ascribing the invention of medicine to the versatile genius of Hermes. It credits the God with the composition of forty-two books, of which thirty-six were devoted to Egyptian philosophy and the remaining six to medicine, cf. Clement of Alexandria, *Stromateis* VI, IV, 37 (*2*, 449 f. Stählin). The magical papyri describing Hermes as the healer of all human diseases (K. Preisendanz and others, *Papyri Graecae Magicae 1*, 194/5 and *2*, 139 f., Leipzig 1928-31) also belong to the Oriental Hermetic tradition, as suggested by Eitrem, *loc. cit.* Cf. also Ibn Abi Uṣaybi'ah *1*, 17 Müller, on the "third Hermes."

The famous ninth-century astrologer Abû Ma'shar considered Hermes the inventor of medicine, according to ash-Shahrazûri, *Nuzhat al-arwâḥ* (cf. the modern Persian translation of the work, published in Tehran 1938, vol. *1*, p. 61).

[18] Following others, I advocated the reading "Cos" when editing Isḥâq b. Ḥunayn's *Ta'rîkh al-aṭibbâ'*, and I still believe that it is the correct reading. The later reference to Cos, which is not found in the *Ta'rîkh*, may have formed no part of the original *Commentary*, cf. below, fn. 21. However, no such story as the one reported here appears in connection with Cos in classical literature, as far as I know.

Assuming that the reference to Hermes does not belong to the original text or is not in its original place, one might see in this paragraph a continuation of the story of the *helenion* and find in it another elaboration of the legend of Helen in Egypt. In this case, a correction of *Qwlws* to *Thwnws* or *Thwns* "Thonis," would be possible.

[19] The importance of Phrygia in the history of Greek music is well known. Mysia could hardly be changed to Marsya(s), one of the legendary Phrygian inventors of the flute. It certainly is the correct reading. In addition to being mentioned next to Phrygia as the result of geographical association, Mysia, like Phrygia, belongs into the ancient history of music as the alternative home of the legendary Olympus, the principal inventor of the flute, cf. Pauly-Wissowa, *Real-Encyclopädie, s.v. Olympos*, no. 26. While the power of music as medicine of the soul is a theme which spread from Pythagorean speculation far into classical thinking, the above connection of music and medicine in general seems unique.

rhythms and melodies they used to cure the pains of the soul, and the pains of the soul are cured by the same (means) by which the body is cured.

Others (again) say that the inventors of medicine were sages from Cos, the island on which Hippocrates and his ancestors—that is, the family of Asclepius [20]—lived. Many of the ancients mention that medicine made its (first) appearance on three islands in the middle of the fourth zone, one of them called Rhodes, the second Cnidus, and the third Cos.[21] Hippocrates came from the (last-mentioned island).

Some have the theory that medicine was invented by the Chaldaeans.[22]

Others (again) say that its inventors were Yemenite sorcerers, whereas some prefer to maintain that they were sorcerers from Babel or from Fârs (Persia).

Some say that its inventors were the Indians, whereas others prefer to maintain that they were Slavs (?).

Others (again) say that its inventors were the people of Crete after whom the *epithymon* is called "Cretan *epithymon*." [23]

[20] This is the usual Arabic translation of "Asclepiads."

[21] The reference to the three original island homes of medicine occurs again in the *Commentary* in connection with the biography of Hippocrates, cf. below, fr. B 3 f and B 3 g. There it would seem to have its original position, even if those fragments do not belong in their entirety to the *Commentary*.

The reference to the fourth zone also is somewhat suspect. In general, this paragraph gives the impression of not being part of the original *Commentary*. It is not found in Isḥâq b. Ḥunayn.

Rhodes is singled out as lying in the center of the fourth zone by Agapius of Manbij, in his *History* (ed. by L. Cheikho, in *Corpus Scriptorum Christianorum Orientalium, Scriptores Arabici* III, 5, 25 and 88, Beirut-Paris-Leipzig 1912). In the latter passage, Agapius states that his information is derived from Ptolemy's *Canon*.

[22] Here and in the following lines, we have a rather strange string of candidates for the honor of having invented medicine. Isḥâq b. Ḥunayn refers only to the Persians, Indians, Slavs. Possibly, none of all these groups figured in the original *Commentary*. However, with one exception, all of them might have been credited with medical knowledge somewhere in ancient works. The one exception appears to be the Slavs, and it seems strange even for Ḥunayn to have mentioned them. Possibly, we have here an ancient textual corruption.

According to Pliny, *Nat. Hist.* 30, 1.2, magic originated from medicine, cf. F. H. Cramer, *Astrology in Roman Law and Politics*, 188a (Philadelphia 1954).

[23] If this statement is derived from the Greek original, it could hardly mean anything but that the variety of epithymum (*Cuscuta epithymum*, "dodder") growing in Crete, through its outstanding medicinal qualities, inspired the Cretans to invent the art of healing. Arabic physicians, at least, know the Cretan dodder; it is mentioned by 'Alî b. Rabban aṭ-Ṭabarî, *Firdaws al-ḥikmah* 5 and 227ₒ (Berlin 1928). Dioscurides IV, 177 (*2*, 327 Wellmann), states, though, that the plant is found in the greatest abundance in Cappadocia and Pamphylia.

For relevant information on *epithymon*, cf. M. Meyerhof and G. P. Sobhy, *The*

Others (finally) say (that it was) the people of Etruria (?).[24]

Of those who say that medicine comes from God, some say that it comes through inspiration by dream visions. They argue in favor of that by referring to the fact that quite a few people saw drugs in their dreams and then employed them while they were awake. Those drugs cured them of severe diseases, and they have cured all who employed them (later on).[25]

Some people say: God gave (the craft of medicine) to mankind through inspiration by experience, and there has been a (gradual) growth and consolidation (of medical knowledge) in this respect. They argue in favor of that by referring to the fact that there was a woman in Egypt who was very sad and sorrowful and afflicted by anxiety.[26] In addition, she had a weak stomach. Her chest was full of bad humors, and she had no menses. Now, she happened to eat elecampane (*râsan*) many times, because she had a desire for it. As a result all her complaints disappeared, and she became healthy again. All those who had one of the complaints which she had and who employed it were cured by it. As a result, people employed experience against all other things.

Those who say that God created the craft of medicine argue in favor of that by referring to the fact that such an exalted science cannot be invented by the intellect of man. This theory is the theory of Galen, and this is the text of what he mentions in his *Commentary on the Book of the Oaths by Hippocrates.*

abridged version of "The Book of Simple Drugs," vol. *1*, part 1, p. 179 ff. Cairo 1932, *Publ. of the Faculty of Medicine of the Egyptian University* 4).

[24] The Arabic text has Ṭûr Saynâ' "Mount Sinai." The letters, however, might as well be read Tyrsenia, or, with a very slight correction, Tyrrenia. If the passage goes back to the Greek original of the *Commentary*, the reading Etruria would certainly be preferable, though a reference to the Sinai Peninsula might even then not be impossible. The Etruscans were known to Aeschylus as a *pharmakopoion ethnos* (fr. 452, Paris 1843, from Theophrastus, *Hist. plant.* IX, 15, 1), and Martianus Capella VI, 637 (p. 311 Dick), says that Etruria is famous for its drugs, cf. K. O. Müller, *Die Etrusker 2*, 343 f. (Breslau 1828). I owe this reference to H. Hoenigswald.

[25] The reference is to the famous practice of incubation which is taken up by the *Commentary* in fr. B 1 c.

[26] Cf. above, fn. 16. The story of Helen in Egypt and the *helenion* is known to us in two principal versions. According to one of them, Helen used the plant to exterminate snakes: there seems to be no possible connection with our text (cf. Aelian, *Hist. an.* IX, 21, quoted by Eustathius 1493). The other version is more to the point, and the report of it found in Diodorus I, 97, is particularly relevant: The *helenion* cures all kinds of evils and causes oblivion, and the women of Diospolis (Thebes) used it as a drug to cure anger and sadness.

The plant is mentioned as productive of urine and menses by Dioscurides I, 28 (*1*, 33 Wellmann). Cf. also Paul of Aegina III, 60, 5 (*1*, 276$_{20}$ Heiberg).

c. Ibn Abī Uṣaybi'ah **1**, 10_{1-8} Müller; transl. in *Journal Asiatique* V, 3, 267 (1854).

In his *Commentary on the Oaths by Hippocrates*, he (Galen) says: People in general bear witness to the fact that it was God who gave them the craft of medicine through inspiration in dreams and visions delivering them from severe diseases. Thus, we find an innumerably large number of people to whom their cure came from God, some (obtaining it) through Serapis, and others through Asclepius in the city of Epidaurus, the city of Cos, and the city of Pergamon—the last-mentioned one being my own city.[27]

2. On Asclepius.

a. Al-Bīrūnī, *Ta'rikh al-Hind* 17_{1-6}, transl. **1**, 35 Sachau. Cf. below, the passage of fr. B 2 e marked by fn. 88.

Galen says in his *Commentary on the Covenants of Hippocrates*: As to the sacrifices in the name of Asclepius, we have never heard that anyone offered a he-goat to him, because yarn spun from its hair cannot be softened and because too much eating of its meat causes epileptic seizures on account of its bad chyme.[28] They offer roosters (to him), as it was done by Socrates.[29] For this divine man (Asclepius) obtained for man-

[27] In the following lines, the Arabic text contains the information that in general all temples of the Greeks and other (non-Muslim) peoples served for the cure of severe diseases through dreams and visions. This summary and vague statement hardly goes back to the original *Commentary;* it might at best be an echo of Ḥunayn's notes.

[28] In some localities, it was customary to sacrifice goats to Asclepius. In the majority of his cult places, however, goat sacrifices were strictly avoided, cf. Edelstein, *Asclepius 1*, 299 ff., fr. 532-35; *2*, 189. According to Servius, *In Vergilii Georgica* II, 380 (*3, 1*, 251 Thilo, cf. Edelstein, *Asclepius 1*, 300, fr. 535), goats are offered to Asclepius because they do not suffer from fever. In this connection, it should also be remembered that according to the legend, a goat nourished the infant Asclepius exposed in the mountains (Edelstein, *Asclepius 1*, 13, fr. 7: *2*, 67, from Pausanias). However, the reasons indicated in the *Commentary* for the avoidance of goat sacrifices are not known from classical sources.

According to Hippocrates, *De morbo sacro 6*, 356 Littré, superstitious cures for epilepsy included, among other things, abstention from goat's meat and the avoidance of goat skins for bedding and clothing. The author adds that if this were true, the Libyans who sleep on goat skins and eat goat's meat should be unusually susceptible to the disease, which is not the case. The alleged susceptibility of goats to epilepsy and the danger of the disease being transmitted to human beings through eating goat's meat were maintained by other ancient authors, such as Plutarch, *Quaestiones Romanae* 290 A, and Clement of Alexandria, *Stromateis* VII, VI, 33 (*3*, 25 Stählin). Cf. F. J. Dölger, *Ichthys 2*, 365-68 (Münster 1922), and O. Temkin, *The falling sickness* 11 (Baltimore 1945).

Ibn Qutaybah, *'Uyūn* 462 Brockelmann; *2*, 74 (Cairo 1343-49/1925-30), reports that goat's meat is supposed to engender worry, melancholy (cf. Galen, *De locis affectis 8*, 183 Kühn), forgetfulness, brain disorders in children, and corruption of the blood. He then goes on to describe the bad effect of the use of sheep (*ḍa'n*) meat upon epileptics. Cf. also al-Jāḥiẓ, *Ḥayawān 5*, 137 (Cairo 1905-7).

[29] Cf. Plato, *Phaedo* 118 A. Strangely enough, Sachau corrected Socrates to Hippo-

kind the craft of medicine which is better than the inventions of Dionysus —wine—and Demeter—the grain from which bread is prepared; therefore, the grain is called after (Demeter),[30] and the vine after (Dionysus).—[31]

b. Al-Bīrūnī, *Ta'rīkh al-Hind* 283_{10-13}, transl. *2*, 168 Sachau. Cf. below, lines 39-45 of fr. B 2 e.

Galen says in his *Commentary on the Covenants of Hippocrates*: It is a well-known fact concerning Asclepius that he was raised to the angels in a column of fire.[32] The same is also said about Dionysus and Heracles and others who worked zealously for the benefit of mankind.[33] God is

crates. He appears to have been under the impression that the following "divine man" refers to Socrates, whereas it clearly refers to Asclepius. It may be noted, however, that Ibn al-Maṭrān, *Bustān al-aṭibbā'*, *ms. cit.* (fr. B 1 a), fol. 110a, states that "the divine (man)," in Greek usage, refers to Hippocrates (and Socrates is known as "the ascetic").

For the numerous testimonies concerning the sacrifice of roosters to Asclepius, cf. Edelstein, *Asclepius 1*, 296-99, fr. 523-31.

[30] The masculine pronoun is used here with reference to Demeter. The change from the feminine to the masculine suffix might have occurred in the process of translation from Syriac into Arabic. However, it is strange that Ḥubaysh (or 'Īsā b. Yaḥyā) should have been unaware of the sex of the deity.

According to the material collected by Edelstein, all three gods are rarely mentioned together, but cf. Arnobius, *Adversus nationes* I, 38 (Edelstein, *Asclepius 1*, 189, fr. 367).

[31] The parenthetic information is derived from Ḥunayn's notes.

[32] "Angels" is a Christian interpretation of Greek *theoi*, cf. P. Kraus and R. Walzer, *Galeni Compendium Timaei Platonis* 48 (London 1951, *Plato Arabus* 1). It probably can also represent Greek *daimones*.

Asclepius is commonly considered to have been killed by lightning. "Column of fire" is a biblical term and was possibly substituted for lightning by the Syriac translator.

In the introduction of the Pseudo-Aristotelian *Secretum secretorum*, this idea has been transferred to Aristotle. The verse addressed to Lycurgus (cf. fn. 33) also appears there referring to Aristotle. Cf. the edition of the Arabic text by 'Abd-ar-Raḥmân Badawi, *Fontes Graecae doctrinarum politicarum Islamicarum*, 67 f. (Cairo 1954); English transl. in vol. 5 of the works of Roger Bacon, ed. by R. Steele, p. 176 (Oxford 1920).

[33] Asclepius, Dionysus, and Heracles are repeatedly mentioned together in this connection by ancient authors, among others Cicero and Porphyry, cf. Edelstein, *Asclepius 1*, 111 f., fr. 239-41. Cicero actually uses the word "benefits."

Without any further specification, Galen is mentioned as the authority for the following statement in al-Bīrūnī, *Risâlah* 25_{16}-26_2 Kraus (Paris 1936): "Galen says: Dionysus and Asclepius had in the past been human beings; God then made them angels because the one taught mankind medicine, and the other invented the wine and viniculture for them."

Since elsewhere in the *Risâlah*, al-Bīrūnī quotes the *Commentary*, one might assume that this passage is also derived from it. However, it comes from Galen's *Protrepticus 1*, 22 Kühn (Edelstein, *Asclepius 1*, 113, fr. 245). In fact, al-Bīrūnī, *Ta'rīkh al-Hind* 16_{11}-17_1; transl. *1*, 35 Sachau, quotes the same passage and correctly indicates its provenience. The Arabic text, however, is slightly different. Thus, instead of "angels," it has "to become gods (*ta'allahâ*)."

said to have done this with them in order to destroy their mortal terrestrial part through fire and, afterwards, attract to himself their immortal part and raise their souls to heaven.[84]

The same passage of the *Protrepticus* also is the source of a note by Ḥunayn to the Arabic translation of Galen, *On Medical Experience* XXXIII, 7, p. 80, transl. 152, Walzer (Oxford 1944). In this work, as he does elsewhere (cf. Edelstein, *Asclepius 1*, 179, 263, fr. 338 and 458), Galen refers to "our ancestral god," though in this case, the Arabic text has *al-mathâlah* "exemplar" instead of "god." Ḥunayn now explains that "he means Asclepiades (!) whom he sometimes calls 'exemplar (*mathâlah*),' and sometimes 'guide (*dalâlah*),' because he became a god after he had in the past been a human being." It would be interesting to check the Arabic translations of Galen's other references to his "ancestral god." One of the passages (*De sanitate tuenda* 6, 41 Kühn) appears to be preserved in translation, cf. H. Ritter and R. Walzer, "Arabische Übersetzungen griechischer Ärzte in Stambuler Bibliotheken," in *Sitzungsberichte der Preussischen Akad. d. Wiss., phil.-hist. Kl.*, 1934.812. However, al-Qifṭī 9_{nt}. Müller-Lippert, quotes a passage from the beginning of *De sanitate tuenda* which runs as follows: "What ought to confirm the truth of medicine in the opinion of people in general is the divine medicine observed in the temple of Asclepius." This seems to be a very free Arabic rendition of the passage from *De sanitate tuenda* in which Galen speaks about his "ancestral god." Bar Hebraeus, *Chronicon Syriacum* (cf. below, fn. 38 and fn. 67) has: "One must not deny the (fact of the) cure of sick people who enter the temple(s) of Asclepius." However, since the whole passage of Bar Hebraeus appears to have been derived from al-Qifṭī, this statement, too, would seem to be a paraphrase of the just quoted passage from Galen.

The continuation of the mentioned passage from al-Birūnī's *Ta'rīkh al-Hind* further illustrates the pitfalls often encountered in attempts to determine the provenience of quotations. After the quotation from the *Protrepticus*, al-Birūnī quotes the *Commentary* (fr. B 2 a). Then, he adds two more quotations from the "same book" by Galen, and one would think that he refers to the *Commentary*. The text runs: "The plain statement of Galen in this book is that if it is true that Asclepius had in the past been a human being and God then considered him worthy of being made an angel, everything else is nonsense. And in another place of it he says that God said to Lycurgus: I am in doubt as to whether I shall call you a human being or an angel, though I am more inclined toward the latter." Now, the second passage is derived from the *Protrepticus*, *loc. cit.*, as it was recognized by Sachau. It is also quoted, in a quite different form, by al-Qifṭī 9_{11-13} and Ibn Abī Uṣaybi'ah *1*, 15_{m}-16_{1}, as derived from the *Protrepticus*. For the first passage, Sachau again compared the *Protrepticus* (*ei d' ouk etheleis emoi peithesthai, ton ge theon aidesthêti ton Pythion*), but there is little similarity. On the other hand, the quotation is reminiscent of a passage of the *Commentary* (B 2 e, ll. 37-39). It is not impossible that both quotations in al-Birūnī do go back to the *Commentary*, and the verses concerning Lycurgus may have been used by Galen on two occasions. However, since this remains a highly uncertain assumption, I preferred leaving these quotations in the doubtful column. It might be helpful in this connection to compare an Arabic translation of the *Protrepticus;* however, only an abridgment appears to have been preserved, in the same manuscript which also contains the Arabic translation of Galen's *Ethics*, Cairo, ms. Taymūr, *akhlâq* 290, no. 8, cf. P. Kraus, in *Bulletin of the Faculty of Arts of the Egyptian University 5*, 5 (1939).

[84] A moral explanation of the idea of deification appears in Porphyry, *Epistula ad Marcellam* 7 (Edelstein, *Asclepius 1*, 111 f., fr. 241). The concept of a purification through fire and the resulting preservation of man's immortal soul is not mentioned in

c. Al-Bîrûnî, *Ta'rîkh al-Hind* 109_{9-14}, transl. 1, 222 Sachau. Cf. below, lines 5-13, as well as the passage marked by fn. 86, of fr. B 2 e.

Opinions similar to (those of the Indians about the egg of Brahma) were held by the Greeks in connection with Asclepius who invented the craft of medicine. For, according to Galen, when they represent him, they place into his hand an egg, as a sign of the spherical shape of the earth and a symbol of the universe.[35] This is to indicate that the whole world needs medicine.

Asclepius is not inferior in rank to Brahma, for they mention that he is a divine power whose name is derived from its activity, namely, the prevention of dryness,[36] because death occurs when there is a preponderance of dryness and coldness. On the other hand, with regard to his physical origin, they say that he is the son of Apollo as well as the son of Phlegyas and the son of Coronis—which is the planet Saturn.—All this because of the power of trinity.[37]

this connection in classical sources, but it does not seem farfetched to recall concepts such as that of the Stoic *ekpyrôsis*, cf. *Stoicorum veterum fragmenta 2*, 191 Arnim, and Arnim's index *s. v.*

[35] Round objects such as bowls can be seen on pictorial representations of Asclepius and his daughter Hygieia. However, the object that comes closest to an "egg" is the "cone of cultivated pine" which Pausanias II, 10, 3 (Edelstein, *Asclepius 1*, 351, fr. 649), noticed in the hand of a statue of Asclepius in Sicyon. An object of this sort was almost certain to give rise to different interpretations. In fact, the author of the *Commentary* may be more correct than Pausanias or the guide who explained the art objects in Sicyon to him.

Empedocles (*Fragmente der Vorsokratiker* A 50 Diels) compared the cosmos to an egg, and the Egyptian and Orphic world egg might be mentioned in this connection. The Orphic world egg is considered identical with existence (*to on*) by Proclus, *In Platonis Timaeum* 30 C-D (*1*, $428_{ult.}$ Diehl), and Damascius, *De primis principiis 1*, 317, Ruelle. Cf. R. Eisler, *Weltenmantel und Himmelszelt* 410 ff., 476 (Munich 1910), and W. H. Roscher, *Lexikon der griechischen und römischen Mythologie 6*, 479 ff., *s. v. Weltschöpfung* (Leipzig-Berlin 1924-37).

The Muslims also knew about the concept of an egg-shaped world through Pseudo-Plutarch, *De placitis philosophorum* 886 D, cf. the edition of the Arabic translation by Badawî, *Aristotelis De anima*, 126 (Cairo 1954).

[36] For this etymology, cf. Porphyry, *Quaestiones Homericae* 232 Schrader (Edelstein, *Asclepius 1*, 125, fr. 269). It was widely known among the Muslims, cf. Ibn al-Maṭrân, *Bustân al-aṭibbâ', ms. cit.* (fr. B 1 a), fol. 109b, and F. Rosenthal, in *Journal of the American Oriental Society 62*, 73 f. (1942).

Al-Bîrûnî adds Ḥunayn's explanation, cf. below, line 7 f. of fr. B 2 e.

[37] The identification of Coronis with Cronos is certainly due to al-Bîrûnî himself. He also originated the suggestion that the three "fathers" of Asclepius reflect the concept of the divine trinity. The *Commentary* has nothing of the sort. Al-Bîrûnî's tremendous knowledge and extraordinary powers of combination demand admiration even if, as in this case, they occasionally mislead him.

d. Al-Qifṭī 9_{5-10}; 10_{17}-11_2 (cf. below, fn. 67); $1ɔ_{16}$-15_2 Müller-Lippert. These quotations from the *Commentary* occur in al-Qifṭī's biography of Asclepius which draws upon a number of sources, and al-Qifṭī does not always make it sufficiently clear which source he uses in a given passage. Fortunately, Ibn Abī Uṣaybi'ah has a long and continuous quotation from the *Commentary* (fr. B 2 e) to which al-Qifṭī's excerpts can be referred, and this has been done in preference to giving a separate translation, cf. below, the passages marked by fn. 39, 55, 59, 66, 69, 74, 77, and 82.

Al-Qifṭī 9_{13-19} further quotes the *Hippocratic Oath* for some information concerning Asclepius that is not contained in it. Though the information partly is in conflict with that of the *Commentary* as shown by fr. B 2 e, it would seem to go back to some gloss to the *Oath*, and somehow might have formed part of the *Commentary*.

In his *Book of the Oaths and Covenant*, Hippocrates mentions that in Greek this name—Asclepius—is derived from splendor and light,[38] and medicine is the craft of Asclepius. Only those who follow Asclepius' life of purity, modesty, and fear of God may concern themselves with medicine, and it must not be taught to the wicked and the evil souls. Only the noble and divine—meaning those who know God—may study it. And Hippocrates further mentions in this book that (Asclepius) was raised into the air in a column of fire.

e. Ibn Abī Uṣaybi'ah 1, 17_{32}-21_7 Müller; transl. in *Journal Asiatique* V, *4*, 195-204 (1854).

In his *Commentary on the Book of the Oaths and Covenant of Hippocrates*, Galen mentions, in connection with Asclepius, what follows:

The[39] information we have about the story of Asclepius is twofold. The one view is allegorical, and the other natural.[40] The allegorical view

[38] No such derivation of the name of Asclepius is known or explainable from the Greek.

This sentence, and the first half of the following one, are quoted by Bar Hebraeus, *Chronicon Syriacum* 6 Bedjan (Paris 1890); transl. by E. A. W. Budge 5 f. (Oxford 1932). Bar Hebraeus has: ". . . is derived from beauty, splendor, and medicine." However, this is no reason for translating the Arabic text of al-Qifṭī by: ". . . is derived from splendor, light, and medicine, the craft of Asclepius." For Bar Hebraeus appears to quote al-Qifṭī directly, and there can be no question of a common source in this particular case, even if Bar Hebraeus occasionally preserves old material (cf. G. L. Della Vida, in *Journal of the American Oriental Society 70*, 182 ff., 1950). Cf. also above, fn. 33, and below, fn. 67.

[39] This paragraph appears in al-Qifṭī 9_{7-10}.

[40] The first interpretation of the figure of Asclepius operates on the assumption that he was not an actual person but has to be explained allegorically. The "natural" interpretation accepts him as a human or divine being. Cf. fr. B 2 c.

Al-Bīrūnī, *Ta'rīkh al-Hind* 48_{11}, transl. *1*, 97, Sachau, refers to this passage in connection with a quotation from a commentary on the *Phenomena* of Aratus where the same distinction is made with regard to the interpretation of the figure of Zeus. The quoted

considers (Asclepius) a divine power whose name is derived from its activity, namely, the prevention of dryness.[41]

Ḥunayn says: Death occurs only when there is a preponderance of dryness and coldness which together dry out the mortal body. Therefore, the profession that protects bodies requiring their fixed amount of heat and humidity to remain alive has been given a name indicating an absence of dryness.

Galen says: They say that he is the son of Apollo, and the son of Phlegyas and Coronis who both took care of him,[42] and that he is composed of a mortal part and an immortal one.[43] This statement indicates that he is concerned with human beings, because they are of his kind. He is also said to have an immortal nature that is better than the nature of man. This name—Asclepius—was derived by the poet from the actions of medicine.[44] He is said to be the son of Phlegyas, because this name is

commentary is preserved in Latin translation and published by E. Maass, in *Commentariorum in Aratum reliquiae* 176 f. (Berlin 1898), where the text reads: *quaeritur autem, quod Iovis meminisse de fabulatione seu natura*, or, according to another version: *et quaeritur, cuius Iovis meminerit, utrumne fabulosi an naturalis.* The Greek original no doubt used *mythos*, or *mythologêma*, for *fabulatione* (*fabulosi*). The Arabic word used in the commentary on Aratus is *ramzî*, whereas the *Commentary* uses *laghz*. Cf., further, Porphyry, *Quaestiones Homericae* 200 Schrader: *mythikôs gar Zeus entautha ho aithêr*, and, in particular, the *Tabula Cebetis* I and XXXIII, where Greek *mythos* appears as *laghz* in the Arabic translation (cf. Miskawayh, *Jâwîdhân Khiradh* 321 ff., Cairo 1952). [Cf. also Olympiodorus, *In Meteora* 164$_{34}$ Stüve.]

However, Greek authors use a great variety of terms in the sense of allegory. Heraclitus who probably wrote his *Quaestiones Homericae* in the first century A. D. and who shows the great popularity, in his time, of the type of allegorical interpretation we find in the *Commentary*, uses not only *allêgorikôs* but also expressions such as *symbolikos* or *ainigmatôdes allêgorein* (p. 37 Oelmann). For Maximus Tyrius, *Philosophoumena* IV, 5, a mythos is something in between *ainigma* on the one hand and *logos* on the other. Cf. also, from the commentaries on Aratus, *op. cit.* 335: *metebê epi ton kat epônymian Dia ton physikon, hos estin aêr* (where "physical" is used in a sense different from "natural" in the *Commentary*), or *op. cit.* 332: *ê kata men tas epônymias ainittetai auton.* A derivation of *ainigma* (or some other of the mentioned terms) could have been the Greek original of *laghz*, instead of *mythos*.

[41] Cf. above, fn. 36.

[42] A possible reading of the transmitted text, adopted here, is *muhadhdhibayhi*, lit. "his two improvers." The most acceptable sense would be foster-parents; however, *muhadhdhibayhi* could hardly mean this. The text is uncertain, and it seems that the solution of the problem has to be sought in some mistranslation of the Syriac text. Cf. also fr. B 2 c. Unfortunately, al-Birûni does not indicate what he found in his text in the place of *muhadhdhibayhi*, or how he understood the word.

[43] Cf. fr. B 2 b.

[44] Sanguinetti suggested that "the poet" was Homer, since he was aware of the fact that the Arabs knew that the Greeks referred to their most famous bard as "the poet," without mentioning his name. Cf. Ibn al-Maṭrân, *Bustân al-aṭibbâ'*, *ms. cit.* (fr. B 1 a),

derived from the word for "burning heat."[46] That is: Son of the heat giving animal power.

Ḥunayn says: He was called by this name, because life is the result of the preservation of the natural heat in heart and liver whose name is derived from "burning heat," because it belongs to the class of fire.[46]

Galen says: He is said to be the son of Coronis, because this name is derived from being sated and gaining health.[47]

Ḥunayn says: He was called by this name to indicate that in the course of the process of digestion,[48] man can become really sated with food and drink only with the help of the craft of medicine, for the preservation of health is achieved only through this profession, as is its restoration once it is gone.

Galen says: He is said to be the son of Apollo, because physicians must possess some of the ability of the diviner,[49] for it is not unnecessary for

fol. 110a, who states that for the Greeks, "the poet" was Homer, and "the poetess" Sappho (the source for this statement is Galen, *Quod animi mores corporis temperamenta sequantur 4*, 771 Kühn). However, the statement in question does not occur in Homer, though it should be noted that the scholia to *Iliad 4*, 194 f. have the appropriate etymology. In these scholia and elsewhere, the name of Asclepius is derived from applying (*askein*) gentle (*êpia*) medicines, or from "applying and making the limbs gentle" (Edelstein, *Asclepius 1*, 125, fr. 270 and 270a; cf. *1*, 12 f. and *1*, 124, fr. 6. and 268, from Cornutus, *Theologiae Graecae Compendium* 33 [p. 70 Lang]: "Asclepius derived his name from healing gently [*apo tou êpiôs iâsthai*]"). No doubt there were poets who expressed the same idea in verse.

[46] Phlegyas, from *phlegô*, "to burn," an etymology which has been provided here with the proper medical interpretation.

[46] The text (Ibn Abi Uṣaybi'ah *1*, 18_{11}) should read: <*wa-*>*shtaqqa*. The antecedent of the relative pronoun could be "life," but it certainly is "natural heat." The latter term would be represented in Greek by *thermon*, and not a derivation from the root *phlegô*. However, Ḥunayn does not think in Greek terms at the moment.

Phlegma, "phlegm," it is true, comes from *phlegô*, but the phlegm has no connection whatever with "natural heat." Moreover, it is quite generally classified as cold, and only very exceptionally as hot, as by Philolaos (*Fragmente der Vorsokratiker* A 27 Diels, from Menon, *Iatrica* XVIII, 41-6, in *Suppl. Aristotelicum 3*, pars 1, 32 f., Berlin 1893) and Prodicus (*Fragmente der Vorsokratiker* B 4 Diels, from Galen), cf. C. Fredrich, *Hippokratische Untersuchungen* 40-43 (Berlin 1899, *Philologische Untersuchungen* 15), and Galen, *Über die medizinischen Namen* 13_{21-30}, 16_{18}, transl. 26, 30 Meyerhof-Schacht (*Abhandlungen der Preussischen Akad. d. Wiss., philos.-hist. Kl.* 1931, no. 3).

[47] Coronis is assumed here to be connected with *korennymi*, "to satiate." Cf. also fr. B 2 c.

[48] In the *Lesarten* of his edition of Ibn Uṣaybi'ah, A. Müller considered the reference to digestion an old gloss.

[49] Apollodorus of Athens, in the second century B. C., stated that Asclepius, like his father Apollo, "superintended divination and augury" (Edelstein, *Asclepius 1*, 149 f., fr. 301), and according to Philostratus, *Vita Apollonii* III, 44 (Edelstein, *Asclepius 1*, 188 f., fr. 366), Asclepius inherited the mantic skill of his father which enabled him to find the proper drugs and cures.

a good physician to have some knowledge of the things that might happen later on.

Ḥunayn says: This refers to medical prognostication.

Galen says: Now, the time has come for us to speak about the pictorial representation, garments, and influence of Asclepius.[50] The statements we find written concerning his deification are more like idle talk than the truth.[51] It is a well-known fact concerning him that he was raised to the angels in a column of fire.[52] The same is also said about Dionysus and Heracles and similar (men) who worked zealously for the benefit of mankind. In general, God is said to have done this with Asclepius and all the others like him in order to destroy his mortal terrestrial part through fire and, afterwards, attract to himself his immortal part and raise his soul to heaven.

Ḥunayn says: Galen explains here how the assimilation of man to God[53] takes place. He says that when a human being annihilates his bodily desires—which are meant by "his mortal terrestrial part"—through the fire of endurance and abstention and when, after driving his rational soul away from those desires, he adorns it with the virtues—which are meant by "being raised to heaven"[54]—, he is similar to God.

Galen says: He[55] is represented (in sculpture) as a man with a beard and long locks of hair. Investigation of the reason why he is represented with a beard while his father (Apollo)[56] appears without one (has led to the following hypotheses):[57] Some people say that he was represented and fashioned in this manner because that was how he was when God

[50] For a very condensed summary of the following discussion, cf. Ibn Nubâtah, *Sarḥ al-ʿuyûn 1,* 220 (Cairo 1305, in the margin of aṣ-Ṣafadi, *Al-Ghayth al-musajjam*).

[51] Cf. above, fn. 33.

[52] Cf. fr. B 2 b and B 2 d.

[53] Since the time of Plato and all through the Middle Ages, the "assimilation of man to the divine" was a central theme of philosophy and also served as a definition for it. The symbolic value of the deification of Asclepius thus finds here the highest appreciation.

[54] The explanatory parenthesis apparently does not refer to "rational soul." Grammatically and syntactically, this would be possible.

[55] This sentence appears in al-Qifṭi 13$_{ult.}$.

[56] The Arabic text reads "his son," which has the same consonant skeleton as "his father." The reading makes no sense, but it is easy to see how it could gain acceptance.

[57] The problem greatly agitated the ancients, cf. Edelstein, *Asclepius 1,* 358 f., fr. 683-85; *2,* 219 f., but none of the explanations given in the *Commentary* appears in classical literature. Edelstein, on his part (*op. cit. 2,* 220), comes to the conclusion that the growing preponderance of bearded representations of Asclepius came about "because the mature figure was held to be the more appropriate representation of the deified physician." In a sense, he thus aligns himself with the second explanation from the *Commentary*.

lifted him up to himself. Others give as the reason for it the fact that his craft requires modesty and maturity.[58] Some people again give as the reason for it the fact that by virtue of (his mastery of) the craft of medicine, he surpassed his father in mental power.

Looking [59] at him, you will find him standing with his garments tucked up. This pose indicates that physicians must (be ready to) philosophize at all times.[60] Those of his limbs which it would be shameful to expose are observed to be covered, and those which are needed for the practice of medicine are naked and exposed.[61]

He is represented holding in his hand a curved staff with branches, made from the marsh mallow tree.[62] This indicates that by employing the craft of medicine, a person may reach the age in which a staff (to lean on) is needed.[63] Or it indicates that a person endowed by God with certain gifts deserves to be given a staff, as one was given to Hephaistus, Zeus, and Hermes.[64] We find that Zeus (!)

[58] Cf. fr. B 2 d.

[59] The text from here to the words "is needed" (marked by fn. 63) appears in al-Qifṭī 13_{11}-14_5.

[60] The identity of philosopher and physician was a favorite idea of Galen and widely accepted.

[61] Representations of Asclepius often show his right side uncovered. Cf. also the relief representing the god Amphiaraus using his naked right hand for medical ministrations (frontispiece in R. Herzog, *Die Wunderheilungen von Epidaurus*, Leipzig 1931, *Philologus, Supplement 22*, Heft 3). Another reproduction in G. Sarton, *A History of Science*, 389 (Cambridge 1952).

According to the biography of Hippocrates by Soranus 12 (p. 177 Ilberg), the physician was represented with his garment covering his head, and one of the explanations was that he wanted to have his hands free for operations and therefore tucked up the garment where it was hanging over, and put it over his head.

[62] The "branches" correspond to the knots (*nodosus*) of the classical sources, cf., for instance, Edelstein, *Asclepius 1*, 361 f., fr. 691. I doubt, however, whether the Arabic word could mean knots.

The common varieties of the marsh mallow plant (*althaia*) are hardly the proper material for a serviceable staff, but this would not deter a speculative mind bent on finding some suitable medical symbolism in the staff of Asclepius. For a symbolic staff of bay wood, cf. below, fn. 83.

For *khiṭmī*, cf. I. Löw, *Aramäische Pflanzennamen* 308 (Leipzig 1881); *idem*, *Die Flora der Juden 2*, 230-33 (Vienna-Leipzig 1924). For the medicinal qualities ascribed to it, cf. fn. 68.

[63] A different interpretation of the staff is given by Cornutus, cf. Edelstein, *Asclepius 1*, 12 f., fr. 6.

[64] The scepter of Zeus and the caduceus of Hermes are characteristic attributes of these deities. Hephaistus may be represented carrying a staff, and his lameness is said to signify his need for some wooden support such as a stick, cf. Cornutus, *Theologiae Graecae Compendium* 18 (p. 33 Lang), and Heraclitus, *Quaestiones Homericae* 41 Oelmann. However, he could hardly claim a staff as his characteristic attribute; this

With that staff consoles [65]
Whomever he likes, and [66] then also wakens with it those who are asleep.

This staff is represented as made from marsh mallow trees, because they completely drive away any disease.[67]

Ḥunayn says: The marsh mallow plant is a drug causing moderate calefaction. It is thus suited for being a medicament of many uses, both when used by itself and when mixed with other matters that are either hotter or colder than it. This was explained by Dioscurides and others who discussed it.[68] For [69] this reason, we find the Greek word for it

would rather be the hammer. Clement of Alexandria, *Protrepticus* IV, 57 (*1*, 44 f. Stählin), speaking about the characteristic attributes of the various gods in pictorial representations, mentions as that of Hephaistus his "craft (*technê*)."

The original text may have mentioned the attributes of each god that characterized his special "gift" and were held by him in his hand, and the translator then simplified his task by calling all of them "staff." It would have been difficult for him to distinguish in his language between the various Greek words meaning "staff," such as *skêptron* and *kērykeion* (and numerous others, such as *rhabdos, baktêria*, etc.), and if the attribute of Hephaistus was not exactly a "staff," he might have chosen to disregard the fact.

The scepter made by Hephaistus for Zeus and given by the latter to Hermes (and then passed on to various Greek heroes, cf. *Iliad 2*, 101 f.; Pausanias IX, 40, 11) cannot be meant here, although the same gods happen to be mentioned.

[65] The common Arabic idiom used here literally means "cools the eyes." It thus is even closer to Greek *ommata thelgei*, in the Homeric verse (*Iliad 24*, 342-44; *Odyssey* 5, 47 f.; *24*, 3 f.) concerning the staff of Hermes, quoted above in translation from Arabic:

. . . rhabdon, têi t' andrôn ommata thelgei
Hôn ethelei, tous d' aute kai hypnôontas egeirei.

The reference to Zeus, instead of Hermes, is a mistake.

[66] Al-Qifṭī 14₃-₇ sets in again and continues for six lines (. . . than it).

[67] Cf. al-Qifṭī 10₁₇-11₃: "According to Hippocrates, the staff of Asclepius was made from the marsh mallow tree, and a snake was represented around it. Galen says: It was made from marsh mallow (wood) to stress the importance of temperance, since the marsh mallow is temperate and neither too hot nor too cold. He used to pay constant attention to temperance and, therefore, thought that he could use only a staff made from a temperate tree. A snake (*ḥayyah*) was represented around it because it has the longest life of all animals. It was, therefore, made a symbol of science which is imperishable." This appears to be a summary of the discussion in the *Commentary*. The first two sentences (with the omission of the reference to the snake) are quoted by Bar Hebraeus, *Chronicon Syriacum* 6 Bedjan; transl. 6 Budge, cf. above, fn. 38.

[68] Cf. Dioscurides III, 146 (*2*, 154-56 Wellmann). According to 'Alī b. Rabban aṭ-Ṭabarī, *Firdaws al-ḥikmah* 402₁₁₋₁₂ (Berlin 1928), the marsh mallow dissolves hot swellings.

Reference to this passage concerning the marsh mallow staff is made by Bar Hebraeus, *Ta'rikh mukhtaṣar ad-duwal* 120 Ṣālḥānī (Beirut 1890).

[69] The following twelve lines, to ". . . future," appear in al-Qifṭī 14₇-₁₈.

(*althaia*) derived from the word for medical treatments.[70] The name is meant to indicate that the marsh mallow possesses many uses.

Galen says: The curved form of the staff and its many branches indicate the great number of subdivisions and branches of the craft of medicine. We also find that the staff was not left without further adornments. Upon it, there is represented a long-lived animal, wound around it—a snake.[71] This animal is brought into connection with Asclepius for a number of reasons. One of them is the fact that the snake is a sharp-sighted animal which is much awake and never sleeps.[72] Thus, the student of the craft of medicine must not be detracted by sleep, and he must possess the keenest possible mind in order to be able to warn (his patients) in advance of present (conditions) and (those) likely to arise in the future. Thus, Hippocrates is found to refer to this activity (of the physician) as follows: "I am of the opinion that the best thing for a physician to use is foresight; for if he has foreknowledge and warns the patients in advance of their present (condition) and those of the past and the future. . . ."[73]

There also is another explanation of the snake represented upon the staff held by Asclepius. Namely, this[74] animal—the snake—is said to have a very long, even an eternal life. Those who employ the craft of medicine are able to live long, and we thus find that Democritus and Perdikkas (?),[75] by employing the precepts of the art of medicine, lived

[70] *Althaia* is considered derived from *althainô*, "to cure," cf. Dioscurides III, 146 (*2*, 154-56 Wellmann): *dia to polyalthes kai polychrêston einai.*

[71] *Tinnîn*, "dragon, large snake," translates Greek *drakôn*, cf. the following note.

[72] For the derivation of *drakôn* from *derkomai*, "to see," cf. Edelstein, *Asclepius 1*, 149, 366, fr. 301 and 701 f.; further, *1*, 361 f., fr. 691, where the snake is said to be the guardian of the Asclepius temple on the Tiber island, because it is the most vigilant of animals. According to Cornutus, *Theologiae Graecae Compendium* 20 (p. 37 Lang), snakes are symbols of Athene, because they look frightening and are vigilant and sleep little (*agrypnos*).

[73] Sanguinetti recognized that this quotation is derived from the beginning of Hippocrates, *Prognostics 2*, 110 Littré: *Ton iêtron dokei moi ariston einai pronoian epitêdeuein. Proginôskôn gar kai prolegôn para toisi noseousi ta te paronta kai ta progegonota kai ta mellonta esesthai* (. . . *pisteuoito an mâllon ginôskein to tôn noseuntôn prêgmata*). It should be noted that the quotation breaks off after the subordinate clause, in the middle of the sentence. Possibly, the words "and so on" were originally found in the text.

[74] The following two lines, up to . . . "live long," appear in al-Qifṭī 14_{16-8}.

[75] Democritus of Abdera is mentioned as one of the longevous philosophers in Lucian, *Makrobioi* 18. The other name is corrupt. Herodotus, as Müller read it, has nothing to recommend himself as a *makrobios*, and it would be equally difficult to explain the occurrence of Herophilus, the teacher of Hippocrates, or Prodicus (both suggested by Sanguinetti) in this context. Heraclitus might be a possible if unsubstantiated correction. However, since Democritus is linked with Hippocrates through the latter's apocryphal biography, the second name might point into the same direction and, perhaps, should be

a very long life. This animal—the snake—sloughs off its skin, called by the Greeks "old age."[76] Likewise people, by employing the craft of medicine, are able to slough off old age, the result of disease, and regain health.

Asclepius[77] is represented with a laurel wreath upon his head because the laurel tree banishes grief.[78] Therefore, we find Hermes, when he is called "the venerable,"[79] (represented) with such a wreath. For physicians must keep away (grief) from themselves.[80] Asclepius is thus provided with a wreath that banishes grief.

Or it is because the (laurel) wreath is common to the craft of medicine as well as divination,[81] and people, therefore, were of the opinion that the wreath used for physicians and diviners should be one and the same (kind of) wreath.

Or[82] it is because the (laurel) tree also possesses some healing power. Poisonous vermin are found fleeing from the places where it is put.[83] The

corrected to Perdiccas. Some sources maintain, probably correctly, that Perdiccas II reigned forty-one years and thus, he might have been considered a *makrobios*.

[76] *Gêras*, "old age," doubles for the "old skin" of snakes in Greek. This fact is often referred to in explanation of the symbolic meaning of the snake of Asclepius, cf. Edelstein, *Asclepius 1*, 10-14, 148 f., 367, fr. 5 f., 301, and 704.

[77] This paragraph appears in al-Qifṭī 14_{22-23}.

[78] Cf. Festus, *De verborum significatu*, 98 Lindsay (Edelstein, *Asclepius 1*, 361 f., fr. 691): "He is crowned with laurel, because it is a tree possessing many medicinal uses."

[79] The Greek equivalent is not clear to me, and the interpretation of the passage, therefore, remains doubtful. "Venerable" suggests Greek *aidoios* and may have resulted from the misunderstanding or interpretation of a reference to an *aidoion*-shaped herma.

Wreaths commonly occur in the cult of Hermes (cf. S. Eitrem, in Pauly-Wissowa, *Real-Encyclopädie 8*, col. 703, *s.v. Hermai;* K. Preisendanz and others, *Papyri Graecae Magicae 1*, 146/7, Leipzig 1928-31), and the laurel is occasionally though not prominently mentioned in connection with the deity (cf. S. Eitrem, *op. cit.* col. 795, *s.v. Hermes*).

[80] In the beginning of *De flatibus 6*, 90 Littré, Hippocrates refers to the fact that physicians cure other people of disease and grief, while they themselves, having to observe so much human misery, "harvest manifold grief." The *Commentary* presents a transformation of this idea.

[81] According to Cornutus, *Theologiae Graecae Compendium* 32 (p. 68 Lang), the laurel is characteristic of Apollo, because among other things, it can be related etymologically to prophecy (*daphnê—diaphainô*). Cassianus Bassus Scholasticus, *Geoponica* XI, 2, calls it the symbol of mantic, and he also states that it produces health. According to Artemidorus, *Oneirocritica* II, 25 (p. 119 Hercher), it indicates "for physicians and diviners their respective crafts because of Apollo."

[82] This and the following sentence are found in al-Qifṭī 14_{23}-15_{2}.

[83] According to *Geoponica* XI, 2, the demons shun places where the bay-tree is found. It is also described as a preventive medicine (*alexipharmakon*) used against suspected enemies, in the proverb: "I am carrying a staff made of laurel wood (*daphninên phorô baktêrian*)," cf. Suidas, *s.v. daphninên*.

However, the poisonous effect on vermins is generally ascribed to the oleander, or

same applies to the plant called *conyza*,[84] and also to the fruit of the (laurel) tree called laurel-berries; used as a salve, they have an effect similar to that of castor.

When they represent that snake,[85] they place into his [86] hand an egg, hinting at the fact that the whole world needs medicine. The symbol of the universe is the egg.[87]

We must also speak about the sacrifices offered to Asclepius in order to achieve nearness to God.[88] Thus, we say: Nobody ever offered any he-goat to God in the name of Asclepius, because yarn from the hair of this animal cannot be softened like wool and because those who eat too much of its meat easily come to suffer from epileptic seizures, for the nourishment generated from it has a bad chyme, is dried out, coarse, bitter, and tending toward bilious blood.

Galen says:[89] In fact, there are people who offer roosters to God in the name of Asclepius. They also are of the opinion that Socrates offered such a sacrifice to him. Such was the condition of this divine man (Asclepius) who taught mankind the craft of medicine (and gave it to them) as a permanent possession that was better than the inventions of Dionysus and Demeter.

Ḥunayn says: The "invention of Dionysus" refers to wine, for the Greeks are of the opinion that the first inventor of wine was Dionysus. The name is used by the poets to allude to the power that changes the sap in the vine and prepares it for becoming wine which generates joy when it is drunk. The "invention of Demeter" is bread and all the other grains from which bread is prepared. Therefore, there are people who

"rose-laurel" (Greek *rhododaphnê*, Arabic *diflâ*, going back to *daphnê*), cf. Meyerhof and Sobhy, *op. cit.* (above, fn. 23), vol. 1, part 3, p. 515 ff. Somehow, the qualities of the "rose-laurel" might have been transferred to the laurel.

[84] Cf. Dioscurides III, 121, 2 (*2*, 132 Wellmann): "The stalk (of *conyza*) with the leaves, spread out and burnt, is able to chase away animals and repel mosquitoes; it also kills fleas." Its effect upon animals is also mentioned by Theophrastus, *Hist. plant.* VI, *2*, 6.

[85] Sanguinetti suggested that the correct reading might be "wreath," instead of "snake."

[86] As the text stands, the antecedent of the pronoun could only be the snake; however, fr. B 2 c proves the correctness of the above translation and precludes any correction to, for instance, "its mouth," or the like.

[87] Cf. fr. B 2 c.

[88] For this and the following paragraph, cf. fr. B 2 a. Cf. also below, p. 84.

[89] This introduction would seem to suggest that at least part of the immediately preceding text belongs to the notes of Ḥunayn; this, however, is not the case. Sanguinetti omits the words "Galen says," but A. Müller, in his edition, gives no indication that the words are missing from any of his manuscripts.

call the grain Demeter. The poets also use the name of (Demeter) for the earth that produces grain. The invention of Asclepius refers to health without which nothing useful or pleasurable could be acquired.

Galen says: For the inventions of those two are of no use as long as the invention of Asclepius does not exist.

The chair upon which Asclepius sits represents the power through which health is gained.[90] It is "the noblest power," as some poet says.[91] We find that all poets praise and glorify this power. One of them says:

> O you[92] who are superior in nobility to all benefactors, in (the enjoyment of) your goodness I want to be the remainder of my life.

Another poet said:

> O you who are superior in nobility to all benefactors, it is you whom I ask for consideration before all other good things.[93]

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[90] While it is well known that Asclepius may be represented sitting (Edelstein, *Asclepius 1*, 345, fr. 630), with his daughter Hygieia standing next to him (*op. cit. 1*, 354, fr. 663), I fail to see how his throne could be considered a symbol of Hygieia, the "health-giving power." Neither *hedra* nor *thronos* suggests any etymological connection.

[91] Cf. the famous *skolion* of uncertain authorship (Simonides, Epicharmus), beginning: *Hygiainein men ariston*. It is first attested in Plato, *Gorgias* 451 E. Cf. *Poetae Lyrici Graeci*, fourth ed., *3*, 645 f. Bergk.

[92] *Ayyuhâ*, instead of *innahâ*, here and in the following quotation. This is the first line of the celebrated hymn to Hygieia ascribed to a certain Ariphron (*Poetae Lyrici Graeci*, fourth ed., *3*, 595-97 Bergk): *Hygieia, presbistâ makarôn, meta seu naioimi to leipomenon biotâs*. "Benefactors (*abrâr*)" renders *makares*, and a translation corresponding to this Greek word might be better than "benefactors," especially since *abrâr* is used for the "virtuous" in Paradise already in the Qur'ân, and an Arabic author might refer to "the blessed (*abrâr*) angels chosen by God to be near him," cf. Miskawayh, *Tahdhîb al-akhlâq*, 16 (Cairo 1322).

In Greek literature, this hymn is also quoted anonymously, and it cannot be decided whether this and the other quotations here were quoted anonymously in the Greek original, or whether the difficult names were dropped in the process of translation.

The statement that "health is one of the things that are superior in nobility" also occurs in the Arabic translation of Galen's *Ethics*, edited by P. Kraus, in *Bulletin of the Faculty of Arts of the Egyptian University 5*, 42_{11} (1939).

[93] For grammatical reasons, it would hardly be possible to translate: "I ask to be considered worthy of you. . . ." Moreover, the verse seems to correspond to the second line of the hymn of Ariphron: *Sy de moi prophrôn synoikos eiês* (transmitted with slight variations). The translator may have tried to give some clumsy literal interpretation to *prophrôn*. At any rate, this is a quotation from another hymn to Hygieia beginning with the same invocation as that of the hymn ascribed to Ariphron, and then continuing with a line corresponding to the second line of Ariphron's hymn. Considering the close relationship between the hymns of Ariphron and Licymnius (see fn. 95), this is by no means a surprising or unusual situation.

Then, there is the general statement:[94] "Are not all the good things, such as wealth, children, or royal authority, which are considered equal in power by all human beings,[95] something auxiliary and enjoyable only by virtue of health which is the benefactor worthy of the name? For health is the highest degree of good,[96] not something good in the second degree, as some philosophers, known as Peripatetics and Stoics, have thought.[97] For all the other virtues that are of paramount concern to

[94] Though the beginning of this quotation is derived from a poem (see fn. 95), we have here a rather lengthy excerpt from a prose lecture on the virtues of health, extending over nineteen lines. A close, if much briefer, parallel is found in Plutarch, *De virtute morali* 450 A-B: "Neither 'the gift of wealth or children' nor 'royal authority that makes men like the gods' (is considered equal to health), and eventually, men consider virtue useless and senseless in the absence of health." Cf. also below, fn. 98.

[95] Sanguinetti understood the text to mean that all the goods mentioned can be equally acquired by all human beings but have no value without health. However, anyone reading the text as transmitted, without giving any thought to its possible Greek original, would understand it as follows: "Which good things, such as wealth, children, or royal authority are considered equal in power (to health) by all human beings? Is not all this. . . ." But the passage obviously is a translation of another line of the hymn of Ariphron (duplicated in the hymn of Licymnius, *Poetae Lyrici Graeci*, fourth ed., *3*, 599 Bergk, and cf. also the quotation from Plutarch, above, fn. 94): *Ei gar tis* (Licymnius: *Tís gar*) *è ploutou charis è tekeôn è tâs isodaimonos anthrôpois archâs* (. . . *sethen de chôris outis eudaimôn ephy*).

The words "considered equal in power by all human beings" are nothing but a poor rendering of *isodaimonos anthrôpois*. In the Arabic text, they are used with reference to all three goods mentioned, whereas in the Greek text, they refer to royal authority alone. This mistake may be due to the Arabic translator from the Syriac, or our Arabic text may be corrupt. By inserting the relative pronoun *alladhi* after "royal authority," the relative clause would become restricted to royal authority, while the sense would otherwise remain unchanged.

[96] An author as late as Suidas (*s. v. hygieia*) defines health as *tôn anthrôpinôn agathôn to kalliston*.

[97] The Stoics consider health an *adiaphoron*. As such, it is something in between (*metaxy*) good and evil. Good and evil actions (*prāxeis*) need it for their realization, and one might pretend to consider it something good. Cf. *Stoicorum veterum fragmenta 3*, 16, 27, 175 Arnim, and the many references in the index of Arnim's work, *s. v. hygieia*. For Galen, cf. *De placitis Hippocratis et Platonis 5*, 597 Kühn.

Referring to the afore-mentioned *skolion* (fn. 91), Aristotle considered it a quite generally accepted popular opinion that being healthy is the best thing that may happen to man (*Rhetoric* 1394 b. 13, cf. Clement of Alexandria, *Stromateis* IV, V, 23 [*2*, 258 Stählin]). For Peripatetic philosophy, however, health is merely one of the goods whose relative position within the scale of goods is frequently discussed, cf., for instance, the commentaries by Alexander of Aphrodisias on the *First Analytics* and the *Topics* (*Comm. in Aristotelem Graeca 1-2*, Berlin 1883-91, index, *s. v. hygieia*).

It may be noted that Neo-Platonism, the most powerful philosophical movement of late Antiquity, could not possibly have considered health as the *summum bonum*. The Neo-Pythagorean Hierocles, *Commentary on the Golden Verses* (verse 17 ff.), mentions "health, wealth, and ruling power" as relative goods. Similarly, the *Tabula Cebetis* VIII (Miskawayh, *Jâwidhân Khiradh* 237, Cairo 1952), enumerates wealth, rank (*doxa*),

human beings during their whole life derive their nobility from health.[98] Thus, we find that men who want to show courage and energy and go to war against their enemies and defend their friends and fight for them can do so only by employing their physical strength (which depends upon health).[99] Justice, that is, seeing that everybody receives what is due to him,[100] doing what is to be done, preserving the laws, and following always the right opinion and course of action, cannot materialize in practice without (the possession of) health. Salvation, too, is considered to be the result of health and to materialize through it.[101] In general, if someone, because he holds a certain opinion or wants to practice idle, misleading sophistry, attempts to say that his intention is not to go after health, such a statement would be just words. If he admits the truth, he will say that health in reality is the highest degree of good." This

good health (*'âfiyah*, but the Greek original has *eugeneia*, "noble birth"), children, and ruling authority as ambivalent goods. In *Tabula Cebetis* XXXIX, where the ambivalence of wealth is discussed, the Arabic text adds a reference to health.

For the general disinclination of ancient philosophers to accept the glorification of health, cf. L. Edelstein, in *Bulletin of the History of Medicine 26*, 309 f. (1952).

[98] Cf. also Aelius Aristides *2*, 357 Keil, on Serapis: ". . . Health . . . without which it is not possible to enjoy either the virtues (*tois agathois*) of the soul or any other happiness." Further, *idem 2*, 335 Keil (Edelstein, *Asclepius 1*, 157/160, fr. 317), speaking about Asclepius: ". . . using health as the one common remedy for all difficulties (pains) and activities (of the crafts and professions)."

[99] The idea that health might be a higher good in war than in peace is expressed by Alexander of Aphrodisias in his commentary on Aristotle's *Topics* 52_{16} Wallies.

[100] Justice is *tou kat' axian hekastôi aponemêtikê*, cf., e. g., Ioannes Philoponus in his commentary on the *First Analytics* 344_{22}. Wallies; Clement of Alexandria, *Paedagogus* VII, 64 (*1*, 127 Stählin), and elsewhere. Aristotle's own phrasing (*Rhetoric* 1366 b 9 f., cf. also *Nicomachean Ethics* 1130 b 9) is somewhat different and, in addition, pays attention to the relation of *dikaiosynê* to *nomos*.

A definition of justice that is quite similar to the one found here appears in Pseudo-Aristotle, *De virtutibus* 1250 b 15-19.

Justice defined as what is proper is Platonic, cf. *Gorgias* 507 B. Discussing justice, Elias, *Prolegomena in Philosophiam*, 19 Busse (*Comm. in Aristotelem Graeca* 18, part 1, Berlin 1900), however, defines *phronêsis*, and not justice, as "doing what is proper."

[101] *Khalâṣ* represents Greek *sôtêria*, and although the translation "salvation" has been chosen here, the author does not think of the theological significance of the term, nor does he want to convey the idea, often encountered among Muslim mystics, that worldly well-being is necessary for the proper performance of the worship of God. He thinks of good health as needed for survival (*sôtêria* "preservation") in any difficult situation. Cf. Maximus Tyrius, *Philosophoumena* VII, 2: "But let Dionysius afflict the Syracusans with his disease of tyranny, and the people, though themselves healthy, will be too weak to effect their salvation (*sôtêrian*)." Philo, *De ebrietate 2*, 197 Cohn-Wendland, says that ". . . in our bodies disease causes dissolution, and health salvation (*hygeia de sôterias aitia*)." Cf. also Lydus, *Liber de mensibus* IV, 22 (p. 81 Wünsch): "Health is the power that controls the opposite qualities (in the body) so as to effect (its) salvation (*kata ton sôstikon logon*)."

power was considered suited for being (represented as) a chair for the man in charge of the craft of medicine. The word for this power also has its correct derivation in the Greek language. It is derived from the word for humidity,[102] because our health can materialize only through humidity. Some poet somewhere indicated this fact by saying: "Humid man."[103]

Looking at the pictorial representation of Asclepius, you will find him sitting and leaning upon men represented around him. This is necessary because he must be steady and not leave the company of people.[104] A snake wound around him is represented with him. The reason for it was mentioned before.[105]

[102] *Hygieia* is here considered derived from *hygrotês*. Already Hippo (*Fragmente der Vorsokratiker* A 11 Diels, from Menon, *Iatrica* IX, 22 ff., in *Suppl. Aristotelicum 3*, pars 1, 17, Berlin 1893, or Hipponax) of Croton had spoken about "a proper humidity according to which we have sensations and through which we live; when this humidity behaves properly, a living being is healthy (*hotan men oun oikeiôs echêi hê toiautê hygrotês, hygieinai to zôion*)." The dominant theory, of course, considers health as the result of the proper mixture of the four humors.

[103] This quotation certainly has nothing to do with Thales' famous theory that man (like everything else) originated from water, which was well known to Hippocrates and Galen, cf. Galen's commentary on Hippocrates, *De natura hominis 15*, 21 Kühn. The Arabic suggests *hygros anêr*, or some similar words, as the Greek original. Our Greek dictionaries (Stephanus, Passow, *s. v. hygros*) quote *hygros* in connection with men and women as occurring in Hippocrates, but there it means "soft." As a matter of fact, *hygros*, as an adjective modifying man, might have been used in its literal meaning of "humid" in some didactic poem on medicine or physics, but general poetry would have thus used it only to express one of its numerous metaphoric meanings. We may assume that the author of the *Commentary* (or his source) seized upon some poetical passage containing the words *hygros anêr* or the like, and found in it a confirmation of his combination of *hygiês* with *hygros*, even though the poet himself had not intended to use *hygros* in its literal meaning. [The reference of the Greek dictionaries may be to Galen's *Commentary on the Aphorisms 17*, part 2, 578, 583, 586 Kühn. Cf. also, from the same work, p. 410: *ex hygrou gar hê genesis hêmin.*]

Another explanation may be suggested, though no proof is possible at present. In a poem quoted by Plato, *Protagoras* 346 C, Simonides praises the "sound man (*hygiês anêr*)." Somewhere, his words may have been distorted to *hygros anêr* and in this form come to the attention of our source. A misreading of Empedocles (*Fragmente der Vorsokratiker* B 38 Diels): *êd' hygros aêr Titan êd' aithêr*, can hardly be assumed.

For the ancients who spoke Latin, it would have been tempting to combine *humidus* and *homo*, though *homo* was usually combined with *humus*.

[104] Group representations of the sitting Asclepius and, for instance, his daughters are known. However, the interpretation of the seated position as steadiness and of the people around Asclepius as symbolizing the necessary sociableness of the physician is not found in any other source.

[105] Cf. above, p. 70 f. This paragraph evidently deals with some different pictorial representation of the God which, however, again included the snake. The preserved text appears to have been shortened.

3. Concerning the biography of Hippocrates.

a. Eutychius (Sa'id) b. Biṭriq, *Annals* 264 f. Selden-Pocock (Oxford 1658); 76 Cheikho (Beirut-Paris-Leipzig 1906, *Corpus Scriptorum Christianorum Orientalium, Scriptores Arabici* III, 6).

In the time of (Artaxerxes Longimannus), the sage Hippocrates, the master of the craft of medicine, lived in the land of the Greeks in the city of Cos. Sa'id b. Biṭrîq, the physician, says:

Proof of this is the information given by Galen in his *Commentary on the Book of the Oaths and Covenant of Hippocrates* to the effect that the Persian king wrote to Hippocrates and offered him much money if he would come to him. However, Hippocrates did not accede to his request and did not go to him, because he did not consider it fair to cure the Persians who were the enemies of the Greeks.[106]

In his translation of this book from Greek into Arabic, Ḥunayn b. Isḥâq mentions that Hippocrates did not go to Artaxerxes, with the nickname of Longimannus. It is said that in the days of this king, the disease called *al-mw'rq* [107]—or, according to another manuscript, pestilence (*al-mûtân*)—befell the Persians, and he therefore wrote to the governor of the city of Cos and asked him to give Hippocrates one hundred hundredweights [108] of gold and send him to him with honor and respect, so that he might cure the Persians of the disease that had befallen them. However, Hippocrates did not accede to his request, because he did not consider it fair to help and cure the enemies of the Greeks.

[106] The story is best known from the Hippocratic *Letters*, 9, 312 ff. Littré, a collection of documents whose date is uncertain but in no case later than the first century A. D., cf. L. Edelstein, in Pauly-Wissowa, *Real-Encyclopädie, Supplementband 6*, cols. 1290-1345, *s.v. Hippocrates* (1935), and, for the history of the text of the *Letters*, cf. G. Pasquali, *Storia della tradizione e critica del testo* 404-8 (Florence 1934). The original text of the *Commentary* restricted itself to a bare version, and Ḥunayn added some details.

In his biography of Hippocrates, al-Mubashshir, *Mukhtâr al-ḥikam*, adds the name of the alleged governor of Cos, calling him Filâṭûs. He clearly is the Paitos of the *Letters* (who, according to Pasquali, represents some Roman Paetus). Cf. also Abû Sulaymân as-Sijistâni, *Ṣiwân*, in the paragraph devoted to Hippocrates, fol. 38b of the Istanbul ms. Murad Molla 1408.

As an example of supreme patriotism, the story was deservedly popular and always appears in connection with the biography of Hippocrates in Arabic literature. Cf. also Ibn Nubâtah, *Sarḥ al-'uyûn 1*, 230 (Cairo 1305, in the margin of aṣ-Ṣafadi, *al-Ghayth al-musajjam*). It was no less popular in the West. At the time of the French Revolution, for instance, it was the subject of a painting executed in 1792 by Girodet-Trioson (1767-1824) for the Medical School in Paris (cf. R. Mouterde, in *Mélanges de l'Université St. Joseph 26*, 75-78, 1944-46).

[107] Possibly, a distorted transcription of Greek *loimikê*.

[108] Qinṭâr, "hundredweight," renders Greek *talanton*, "talent."

b. Al-Mas'ûdî, *Tanbîh* 131_{11}-132_1 De Goeje (Leiden 1894, *Bibliotheca Geographorum Arabicorum* 8).

Between Galen and Hippocrates are about six hundred years, for Hippocrates lived about one hundred years before Alexander in the days of the early (Achaemenid) Persian king Artaxerxes—whom I believe to be Bahman b. Isbandiyâdh b. Kay Bishtâsb b. Kay Luhrâsb.[109]

This is mentioned by Galen in his *Commentary and Interpretation of the Book of the Oaths of Hippocrates,* which was translated by Ḥunayn b. Isḥâq. He tells that this Artaxerxes wrote to his governor in the city of Cos in the land of the Greeks who at that time were his subjects, and commanded him to give (several) hundredweights of money to (Hippocrates) and send him to him with great honor, for an illness called pestilence had seized the Persians at that time. However, Hippocrates refused, because he did not consider it fair to cure the Persians who were the enemies of the Greeks.

c. Al-Birûni, *Risâlah fî fihrist kutub Muḥammad b. Zakarîyâ' ar-Râzî* 23_{10}-24_2 Kraus (Paris 1936).

Further (such chronological information) is the statement that Hippocrates lived in the days of Ardashîr Bahman, whose name, in the books of the western (historians), is Artaxerxes, with the nickname of Longimannus. At the time of his siege of Rûmîyah,[110] (Ardashîr) asked the governor of Cos for (Hippocrates), according to the information given by Galen in his *Commentary on the Covenants of Hippocrates.*

d. Al-Qifṭî 91_{5-11} Müller-Lippert. It is doubtful whether this and the following fragment go back to the *Commentary*, but since there is a good amount of probability that they do, they have been included here.

In the treatise which he translated on the authority of Hippocrates,[111] Galen mentions that Ardashîr invited (Hippocrates) to come and treat him for a disease that had befallen him, but Hippocrates refused, because Ardashîr was an enemy of the Greeks. (He also mentions) that each of two kings invited Hippocrates to come and treat him, and he complied

[109] Cf. A. Christensen, *Les Kayyanides,* in *Kgl. Danske Videnskabernes Selskab, hist.-filol. Meddelelser 19, 2,* 118 ff. (1932).

[110] According to the *Letters,* Hippocrates sent his reply to the Persian king via the latter's governor of the Hellespont. This might have given rise to the idea that an expedition against Byzantium was connected with the story. Rûmiyah might also stand for Rome.

[111] This might be construed as a reference to the *Letters* if it were not for the fact that the suffix used with *risâlah*, meaning either "treatise" or "letter," can refer only to Galen.

with their request, because their way of life was a good one. But when they were cured of their disease, he did not stay with them, because he abstained from the world and worldly people.[112] When Ardashir's disease became severe, he is said to have offered a thousand hundredweights of gold to Hippocrates if he would come to him and cure him of his disease. However, Hippocrates refused and did not accede to his request.

c. **Ibn Abi Uṣaybi'ah** *1, 27*$_{8-20}$ Müller. Cf. B 3 d.

Hippocrates had no desire of serving a king for the purpose of acquiring wealth or of increasing his property beyond his necessary requirements.[113]

In this connection, Galen says that Hippocrates did not accede to the request of a powerful Persian king, known to the Greeks as Artaxerxes, the Persian Ardashir, the ancestor of Dârâ b. Dârâ.[114] In the days of this king, an epidemic befell the Persians, and (the king) wrote to his governor in the city of Cos and expressed the wish [115] that he hand over a hundred hundredweights of gold to Hippocrates and send him (to him) with very great honor and respect. This money was to constitute an advance payment, and he was to guarantee him fiefs of the same value. He also wrote to the king of the Greeks and asked him for his help in dispatching (Hippocrates) to him. He guaranteed him an armistice of seven years, as soon as he would dispatch Hippocrates to him. But Hippocrates did not consent to leaving his place and going to the Persians, and when the king of the Greeks insisted that he go, Hippocrates said to him: "I do not sell virtue for money." [116]

When he treated king Perdiccas for some diseases he was suffering from, he did not stay with him all the time, but went away to treat the indigent and the poor in his own place and in other cities, even small ones. He personally traveled around and visited all Greek cities.[117] He eventually composed for them a book on *Airs and Countries*. Galen says: This attitude of his caused him to think little not only of wealth but also of ease and quiet, to which he preferred work and exertion in behalf of virtue.

[113] One of the kings was Perdiccas, and the other may have been the unexplained king Demetrius of the *Letters*, unless the legend of Hippocrates' liberation of Athens from the plague is alluded to as a service rendered to some "king." But it is also possible that the two kings refer to Perdiccas and the just mentioned Ardashir, and the source of the statement may be the passage from Galen referred to in fn. 117.

[114] This passage is quoted by al-Ghuzûli, *Maṭâli' al-budûr 2*, 94 (Cairo 1299-1300).

[115] That is, Darius III who was defeated by Alexander.

[116] *Leg.: bi-madînati* ⟨*Qû*⟩ *fa-arâda an. . . .*

[117] Hippocrates, in a letter to Demetrius, says that the Persian king does not know that "wise words have more power over me than gold" (*9*, 318 Littré).

[117] Cf. Galen, *Quod optimus medicus sit quoque philosophus 1*, 58 Kühn.

f. Al-Birûnî, *Risâlah fî fihrist kutub Muḥammad b. Zakarîyâ' ar-Râzî* 26_{2-6} Kraus (Paris 1936). The fragment very probably is derived from the *Commentary*. Cf. fr. B 1 b (above, fn. 21) and fr. B 3 g.

Galen says: The family of Asclepius [118] had in the past been bound by oaths and covenants preventing them from teaching medicine to outsiders. They had restricted (the instruction in it) to their children in the medical schools on the islands of Rhodes and Cnidus [119] and in the city of Cos, and had passed it on orally to their heirs. Eventually, however, Hippocrates feared that the craft might be lost, and he therefore fixed it permanently in writing.

g. Ibn Abî Uṣaybi'ah *1*, 24_{10-31} Müller. Possibly, only the middle paragraph is derived from the *Commentary*. Cf. above, fn. 21, and the preceding fragment. Cf. also Ibn Ridwân, *an-Nâfi' fî ta'lîm ṣinâ'at aṭ-ṭibb*, referred to by J. Schacht and M. Meyerhof, *The medico-philosophical controversy between Ibn Butlan of Baghdad and Ibn Ridwan of Cairo* 21 f. (Cairo 1937. *Publ. of the Faculty of Arts of the Egyptian University* 13).

Hippocrates looked into the craft of medicine, and noticing that it had already disappeared from most of the places in which Asclepius had established medical instruction, he became afraid that it might be completely wiped out.

The places in which the craft of medicine was studied were, according to the information mentioned by Galen in his *Commentary on the Book of the Oaths by Hippocrates*, three in number: One was in the city of Rhodes, the second in the city of Cnidus, and the third in the city of Cos.

(Medical) instruction in the city of Rhodes had disappeared, because the masters had no heirs. (Medical instruction) in the city of Cnidus was (nearing) extinction, because those who were heirs to it were just a few persons. In the city of Cos, where Hippocrates resided, (medical instruction) still persisted, (but only) a few remnants remained of it, because

[118] Cf. above, fn. 20.

[119] The text has a wrong "Cyprus."

The three islands are mentioned together by Galen (*De methodo medendi 10*, 5 Kühn) as the respective homes of the Asclepiads. The obscure school of Rhodes is said there to have contributed much less to the progress of medicine than the other two.

Cf. also the passage from Galen, *On Medical Experience* XXII, 2, pp. 53, 128, and 161 Walzer (Oxford 1944), where Diogenes, arguing with someone who contends that there is no motion, refers to the sailors who always shout: "Who wants to go to Rhodes, to Cnidus, to Cos, to Lesbus!" A quotation of the same passage in a Latin translation of some other work by Galen omits Lesbus.

In Arabic tradition, the story of the three island homes of medicine and their gradual deterioration became the best established and most commonly mentioned fact of medical history.

those who were heirs to it were few. Now, Hippocrates looked into the craft of medicine and found that it had almost disappeared, because there were few children in the family of Asclepius to inherit it. Therefore, he was of the opinion that he (should) spread it everywhere on earth, hand it over to the rest of mankind, and teach it to those who were deserving of it, so that it might not disappear. He said that "benefits should be liberally extended to all who deserve them, whether they be one's relatives or not."[119a] He took in strangers and taught them the craft of medicine. He established the written *Covenant* for them and made them swear the oaths contained in it. (They also had to swear) that they would not oppose his injunctions nor teach anyone the science of medicine unless he declared before that he would abide by this *Covenant*.

C. CONCLUSIONS.

1. Hunayn's work.

The earliest user of the *Commentary* was Ḥunayn's son, Isḥâq, in his *Ta'rîkh al-aṭibbâ'* (cf. above, B 1 b). However, Isḥâq did not reveal his source. The oldest express quotation comes from Eutychius (877-940), who is closely followed in time by al-Mas'ûdî (d. 956-57). Our next source is al-Bîrûnî (973-1048), followed, it seems, by Ibn al-Maṭrân (d. 1191). Then, we have al-Qifṭî (1172-1248) and Ibn Abî Uṣaybi'ah (d. 1270). As far as we can judge, all these authors made independent use of the *Commentary*.

Ḥunayn himself states that he translated the *Commentary* from Greek into Syriac and added notes of his own. The addition of notes was his custom in his translations,[120] though here, the notes seem to have taken the form of a running commentary. In some quotations, the distinction between the original text and Ḥunayn's notes is clearly indicated. This is important because a certain amount of confusion between text and notes must be expected. In this connection, the fragment from Eutychius (fr. B 3 a) is particularly instructive. It shows that the name of the Persian king who invited Hippocrates to visit him was not indicated in the *Commentary* itself, but was added by Ḥunayn. Other quotations dealing with

[119a] In the *Testament* (*waṣâyâ*) of Hippocrates (cf. Ritter-Walzer, *op. cit.* [above, fn. 33], 806), Hippocrates exhorts physicians "not to withhold medical instruction from those who want to study the craft of medicine and are deserving of it" (quoted from 'Alî b. al-'Abbâs al-Majûsi, *al-Kâmil 1*, 8, Bûlâq 1284, cf. the Latin translation).

[120] Cf., for instance, Galen, *On Medical Experience*, above, fn. 33.

the same story give the wrong impression that the name was found in the original text.[121]

Not only may there be occasional doubts as to the accuracy of the quotations and the distribution of the transmitted text upon *Commentary* and notes, but there also is the difficulty—always encountered in collections of fragments—of determining the exact extent of a quotation. Fortunately, in some cases, beginning and end are clearly marked. An insoluble problem, on the other hand, is the one of tracing possible quotations not expressly indicated as derived from the *Commentary*. Originally, I had felt that a large part of the Arabic biographies of Asclepius and, in particular, Hippocrates might go back to the *Commentary*. I am no longer convinced that this is the case. At any rate, at the present state of our knowledge, such an assumption could not be proved. Therefore, great reluctance has been shown to include anything that is not clearly marked as coming from the *Commentary*, either by express reference or through parallel quotations.

Ḥunayn's statement as to his own share in the work cannot be doubted. He had a Greek text which he translated into Syriac, with the addition of some notes of his own. Some traces of the Syriac translation may still be discerned in the Arabic text, and others may turn up upon further study.[122] The Syriac work, then, was twice translated into Arabic, respectively by Ḥunayn's nephew Ḥubaysh and by another proficient translator from Ḥunayn's school. We cannot decide whether the two translations substantially differed in any respect, nor, it seems, which one was used by our sources.[122a] It would seem quite certain, however, that only one of the two translations was used by all of them. Eutychius' statement (fr. B 3 a) that Ḥunayn translated the *Commentary* from Greek into Arabic (instead of Syriac) is an easily understandable inaccuracy. If the fault is not that of Eutychius, it is possible that the text used by him mentioned the name of Ḥunayn as that of the translator, but contained no further details.

2. The Greek original.

Ḥunayn is well-known for the meticulous accuracy of his statements concerning his translation activities. Thus, we can be sure not only that he possessed a Greek text of the work which he translated, but also that he

[121] Cf. also fr. B 2 c. Al-Birûnî, however, did not intend to quote either *Commentary* or notes literally.

[122] Cf. above, fn. 30, fn. 32; further, fn. 42, and fn. 95.

[122a] Bergsträsser' investigations (cf. fn. 4) are inconclusive, and not even today does there exist enough material to solve the problem on the basis of stylistic criteria.

believed it to be a work by Galen. It may have been a rather lengthy text; for our quotations, concerned as they are with the history of medicine, would seem to belong to the introductory material and refer to the first paragraph of the *Hippocratic Oath*. On the other hand, the *Commentary* might have been restricted to a number of glosses to some selected passages of the *Oath*.

Galen does not mention the *Oath* in his preserved works, but this does not entitle us to assume that he did not know about its existence. However, no Greek or Latin source credits him with the composition of a commentary on the document. This fact by itself is no conclusive proof that he did not write one.[123] And as far as Ḥunayn was concerned, he was well acquainted with the style and ideas of Galen and would not have hesitated to express his doubts concerning the Galenic authorship of the work if he had felt any. It is true that the historical, mythological, and poetical material of the *Commentary* was not characteristic of Galen's ordinary style,[124] but the lost portions, even if they were not very extensive, ought to have contained a good deal of medical opinions which might have proved—or disproved—the Galenic character of the work to Ḥunayn. Thus, Ḥunayn's acceptance of Galen's authorship has some weight and might counterbalance the silence of Greek and Latin authors. The final decision rests with the fragments themselves. Could they have originated with Galen, or do they disagree with his known ideas and literary style? In the former case, we would have the *possibility* of Galenic authorship; the actual authorship might still belong to some other scholar before, in, or after the time of Galen. In the latter case, we would have the *certainty* of non-Galenic authorship, and we would then be free to search for the period most likely to have been the one in which the work was composed.

Anyone attempting to deal with the thorny problem of the *Commentary*'s authorship is in a much better position now than he would have been a few years ago. For in 1945, Emma J. and Ludwig Edelstein published their exhaustive collection of Greek and Latin references to

[123] Cf. E. Orth, *Eine unbekannte Schrift Galens*, in *Philologische Wochenschrift 54*, 846-48 (1934). Vice versa, even where the title is mentioned in the list of Galen's writings, the preserved work might not be genuine, cf. W. Diller, in *Hermes 68*, 170 (1933).

[124] Attention should be called to Ḥunayn's famous statement, when confronted with a quotation from Aristophanes in a work of Galen, that he was familiar with the style of Galen, but not with that of Aristophanes, cf. Galen, *Über die medizinischen Namen* 17 f., transl. 32 Meyerhof-Schacht (in *Abhandlungen der Preussischen Akad. d. Wiss., philos.-hist. Kl.* 1931, no. 3).

Asclepius, which has often been quoted in the footnotes to the preceding pages. Nothing of any real importance appears to have escaped the authors, and their clear and comprehensive presentation makes it easy to study and evaluate the classical sources.[125] Comparing their material with the section on Asclepius from the *Commentary*, we can be certain of an important, if wholly negative, result: There is no single Greek or Latin source that could be related directly to the *Commentary*. One of the most striking features of the *Commentary* is its interpretation of the symbolic attributes of Asclepius as indicative of the attitude and behavior of the model physician. Nothing exactly comparable appears in the Edelsteins' collection where it would be found if it existed in the preserved classical literature; the text interpreted by them in a similar sense (*Asclepius 2*, 221 f., cf. also the conclusion, p. 231) is much less explicit. Thus, we have to proceed, as well as we can, with the help of inference and deduction.

The first question we must ask ourselves is whether our fragments betray any Christian influence. That they do is perfectly obvious; but it is no less obvious that this Christian influence is due to the Christian translators, and not to the author of the Greek original. The hand of the translator may be observed in passages that attribute medical cures to *God through* Serapis and Asclepius (fr. B 1 c); that mention sacrifices offered to *God in the name of Asclepius* (fr. B 2 a and fr. B 2 e), *in order to achieve nearness to God* (fr. B 2 e); and that describe Asclepius as having been raised to the *angels through God* (fr. B 2 b and fr. B 2 e). These slight modifications of the original text are by no means arbitrary and insignificant embellishments by someone using a foreign linguistic medium. They constitute a Christian interpretation of pagan forms of thinking, and they were badly needed in order to make those forms understandable and acceptable in a Christian age. The need for such interpretational changes was urgent and the result of practical considerations rather than theological scruples. For example, when Galen speaks about his "ancestral god" (cf. above, fn. 33), this seemed not only most shocking nonsense, but how could one trust as a physician, let alone accept as the supreme medical authority, anyone who held such childish beliefs? Scholars may have realized that the external forms of a civilization did not invalidate its solid scientific achievements, but the vast majority of students, physicians, and educated readers did not make such fine distinctions. Greek speaking professors, therefore, preferred to use prudence in dealing with

[125] In connection with the *Commentary*, a collection of the artistic monuments referring to Asclepius would have been helpful.

unpopular ideas, and translators, thinking of the audience they wanted to win for their particular subjects, would act wisely by incorporating the generally accepted conventions of interpretation in their work, even if at times they made bold and came out with a straightforward translation.

In the passages just mentioned, the Christian interpretation of the translator is easily recognized. It is somewhat different with the statement that the discussion concerning Asclepius' deification is "more like idle talk than the truth" (fr. B 2 e, above, fn. 51). This statement could reflect the attitude of a Christian author opposing pagan polytheism. However, it is clear from the context and from a passage of Galen quoted in al-Bīrūnī's *India* (above, fn. 33) that it is not Asclepius' deification as such that is considered nonsensical, but certain theories held about it. The author of the *Commentary* states unequivocally that Asclepius became a god, though he also maintains that he was not always a god but had been a human being. This was a theory quite commonly advocated by the ancients. Christian authors eagerly seized upon it. However, they rationalized that the ancients merely imagined that some benefactors of mankind had become gods, or were using allegorical language. No such qualifications appear in the *Commentary*.

The author of the *Commentary*, in fact, must not only be absolved of having used any obviously Christian elements, but his work is strictly pagan in spirit. The reality of the entire Greek pantheon with its mythology is taken for granted, and the possibility of the primevalness of the world is admitted without a word of protest. It would thus seem certain that the *Commentary* was the work of a pagan author. However, it might be safer to say that it was the work of an author who wrote as a pagan would have written; for we do not know how a Hellenistic physician who also was a Christian might have handled the task of lecturing on early medical history. He might have merely reported pagan opinion without commenting upon it.[126] At any rate, though there can be no absolute certainty, it would seem permissible to consider the sixth century as the latest possible date for the composition of the original work. As a *terminus post quem*, the first century A. D. is suggested by the apparent use of the Hippocratic *Letters* (cf. above, fn. 106). In any event, the *Commentary* is not likely to go back to earlier times, even though this possibility cannot entirely be ruled out.

Objective criteria for narrowing down these time limits are not avail-

[126] A tenth-century Christian author, such as the historian Agapius of Manbij (cf. above, fn. 21), for instance, accepts the Greek gods as historical beings and synchronizes them with biblical personalities.

able. If the fragments would reveal the presence of strong and characteristic Neo-Platonic influences, the lower limit would be preferable, but their mere absence (cf., in particular, above, fn. 97), especially in a work not concerned with philosophy, means nothing. Nor can a specific date be assigned to the transference of the symbolism of Aesculapian attributes to the moral behavior of physicians in general, as attested in such detail in the *Commentary*. Only a physician dealing with medical iconography might have elaborated on this topic, and no such author has been preserved for us in Greek or Latin.[127] The idea as such could have been conceived at any time within the indicated time limits, as well as at an earlier or later date.

Nearly all close parallels that do exist between the *Commentary* and classical literature concern details known in the second century A. D. (and, in some cases, considerably earlier than that). Most of the comparative material is derived from authors such as Cornutus, Galen, Pausanias, Festus, who either lived in, or used sources of the first and second centuries.

There is nothing in our fragments that points directly to Galen, but they also contain nothing that could not have been said by him. Much of the material, it is true, consists of quotations and records the opinions of others. Thus, to mention one example, Galen, speaking as a physician, discusses health in terms quite different from the commonplaces of the *Commentary*. However, he would have felt no hesitation to quote the ringing phrases of famous poets or writers on the subject upon suitable occasions. Then, it might be tempting to consider the style of the *Commentary*, which is succinct and factual, and contrast it with Galen's well-known prolixity. Again, the available material is too limited for a valid stylistic comparison, and the successive translators might have followed the frequent practice of abridging their original. That Galen would not have been interested in the subject matter of the *Commentary* could not be seriously maintained by anyone who has read, for instance, his *Protrepticus*.

In sum, it appears that the *Commentary* was composed between the second and sixth centuries A. D. In the absence of any contrary indications, the second-century limit deserves preference, certainly as far as the original conception of the material contained in the *Commentary* is concerned. Galen's authorship can be neither confirmed nor rejected, and

[127] Medical authors contribute only a very small amount of material to Edelstein's *Asclepius*. Galen discusses the iconography of Tyche and Hermes in the beginning of the *Protrepticus*. Cf. also above, fn. 61.

our indecision in this respect, I venture to suggest, would continue even if the fragments were available in their original Greek and ascribed to Galen. Since Galen's reputation has been overpowering at all times, his name might have been used as a label for someone else's work, as, in fact, it frequently was. Moreover, if Galen had written a commentary on the *Oath,* it would have been considered a work of paramount importance and would hardly have failed to leave tangible evidence of its existence in Greek or Latin tradition. It is for these reasons that we should exercise caution and refrain from insisting upon Galen's authorship. Be this as it may, the *Commentary* remains the most serious and well-informed work on the mythological history of medicine down to the time of Hippocrates that has come to us from Antiquity.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE AND REPORTS

ERIK WALLER, M. D., PH. D.

November 29, 1875—January 28, 1955

STEN LINDROTH *

The Swedish physician and surgeon, Dr. Erik Waller, died on January 28, 1955, nearly eighty years of age, in his home in Lidköping, a small town in the south-western part of Sweden, on beautiful Lake Vener. He was widely known as an able and scrupulous surgeon, and worked for many years in the large provincial hospital and clinic in Lidköping. It was, however, in quite another field that his name became a household word among friends of the history of medicine all over the world. He was a bibliophile in the grand manner.

About 1910, when a young surgeon in Lidköping, he began collecting old and rare books on the practice of medicine down the centuries, but he had already accumulated manuscripts and autographs of famous doctors and scientists. With unflagging zeal he added book after book to his collection until at the time of his passing it numbered more than 23,000 volumes, exclusive of manuscripts and pamphlets, and had become the largest private library on medical history in the world.

It is difficult to give an adequate survey of the wealth in the Wallerian library. Above all, it is unsurpassed in completeness within spheres of particular interest to Dr. Waller. From first to last he disregarded exertion and expense when on the track of a treasure he lacked and wanted. The core of his library is undoubtedly the Vesalius, Paré, and Harvey collections. Some of the works are unique, and at least the Paré collection may prove the largest in existence. The collection of medical incunabula numbers one hundred and fifty. The collections of old Hippocratic and Galenic editions; of Paracelsus, Sydenham, Boerhaave; of tracts on syphilis; and of writings on obstetrics, ophthalmology, and others, are exceptional. On looking into the library for the first time one is tempted to exclaim: Here is everything—or nearly everything! This impression is almost true for the early centuries, for up to the 19th century it is easier to point out lacunae than to enumerate the works present. As to modern times where the medical literature is enormous, Dr. Waller confined himself to literature actually significant to the history of medicine. Dr. Waller took great interest in tracing former ownership, noting the many remarkable sketches and marginal notes. Thus a book by Jacob Sylvius—Venice 1555—owned by Fabricius ab Aquapendente and by him adorned with many glosses, later became the property of his pupil William Harvey, as shown by the signature "Will. Harvey 1621." At a much later date it landed in Richard Mead's collection, was treasured by the famous library of Georg Kloss

* Translated, with some additions, by Dr. Anne Tjomsland.

in Frankfort, rested a while with John Cleland, professor of anatomy in Glasgow, from which collection it found its way to Sweden and Waller.

As a person, Dr. Waller was most unassuming and likable, wholly devoted to his profession and his collections while not losing touch with life around him. He was not an author in the strict sense, but a prolific letter writer. In *Lychnos*

ERIK WALLER
1875–1955

of 1936 he put into writing a lecture he gave at the Medical History Congress in Madrid, 1935, describing a unique Vesalian edition in his library.

With colleagues and collectors in Europe and America he was on intimate terms. Dr. Cushing, for a long time his most ardent competitor in the book markets, was one of his friends. Cushing's adviser in Switzerland, Arnold Klebs, once located a rarity on the market, blown up to a forbidding price. Klebs telegraphed.

The answer came immediately: "Buy! God help us. Cushing." It was not always easy for the Swedish crown to compete with the American dollar.

Dr. Waller was, naturally, a well-known figure in the rare book stalls of Europe. One day, the story goes, he walked into a rare book store in Rome and asked for a certain book. The dealer looked up and said: "You must be Dr. Waller of Sweden." When the good doctor wondered while admitting his identity, the dealer said: "There are only three people in the world who would ask for this book, and the other two have been here." (Perhaps the other two were Osler and Cushing.)

It was one of the keenest pleasures in Doctor Waller's life to show visitors his beautiful home and library. He illuminated his treasures with a sober enthusiasm which never failed to inspire his listeners. He had an extraordinary basic knowledge of medical history. He knew exactly what each particular volume once had meant in the development of the healing art.

In 1950 a few years before his death, Dr. Waller donated his entire collection of books to the library of Uppsala University, which from the standpoint of medical history thus became one of the world's most excellent libraries. A printed catalog of the Bibliotheca Walleriana in two volumes will shortly be published. This catalog, prepared by Hans Sallander, will assuredly become, not only an important tool for historical research, but also a lasting memorial to a remarkable man and his achievements.

ANNOUNCEMENTS

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

Twenty-Ninth Annual Meeting: Durham, N. C., April 19-21, 1956

The Twenty-Ninth Annual Meeting of the American Association of the History of Medicine will open on the morning of Thursday, April 19, with registration and a tour of the campus of our host, Duke University. Dr. George Rosen, Chairman of the Program Committee, and Dr. George J. D'Angelo, Chairman of the Committee on Local Arrangements, have prepared for the members an excellent program of papers and entertainment. There will be two Symposia, one on the History of Southern Medicine, the other on the History of Epidemiology, and two sessions for general papers. As the Garrison Lecturer the Association is indeed fortunate in having Mr. F. N. L. Poynter, the distinguished Librarian of the Wellcome Historical Medical Library. One of the sessions will be held at Chapel Hill, where the members will have an opportunity to visit the University of North Carolina. Luncheons and the annual dinner will round out the festivities.

On Wednesday evening, April 18, preceding the formal opening of the meeting of the Association, Dr. Chauncey Leake will deliver the annual Trent Memorial Lecture sponsored by the Josiah C. Trent Society for the History of Medicine at the Duke University School of Medicine. Members of the Association are cordially invited to attend.

Headquarters for the meeting will be at the Hotel Washington Duke. Those planning to be present are urged to make their reservations early.

Dr. John B. Blake Appointed Secretary-Treasurer

Following the resignation of Dr. Ilza Veith, John B. Blake, Ph. D., has been appointed Secretary-Treasurer, *ad interim,* by vote of the Executive Committee of the Association. Dr. Blake's address is: The Rockefeller Institute for Medical Research, 66th St. and York Ave., New York 21, N. Y.

NATIONAL NEWS

Armed Forces Institute of Pathology

A course of "Lectures on the History of Pathology and Experimental Medicine" will be presented by Morris C. Leikind, Chief, Historical Research Division, Medical Museum. The course will comprise fourteen lectures to be given at 4:30 p. m. in the Dart Auditorium of the Walter Reed Army Medical Center, beginning on Tuesday, January 10, 1956, and each Tuesday thereafter. All interested persons are invited to attend.

Boston

On the occasion of the Ninth Clinical Session of the American Medical Association, Boston, Mass., November 29-December 2, 1955, the Boston Medical Library set up an exhibit of about 150 books illustrating "Three Centuries of

New England Medicine." Dr. Henry R. Viets, Librarian, who was responsible for the exhibit, also prepared a leaflet sketching the period and its contributions.

Dexter Chemical Corporation Award

The Dexter Chemical Corporation has established an award in the history of chemistry amounting initially to the sum of $250.00 and a suitable scroll. The sole administration of the award rests with the Division of History of Chemistry of the American Chemical Society whose chairman will appoint three members of the Division to serve as the award committee. The award, which will be given for the first time this year, shall be made on the basis of services which have advanced the history of chemistry in any of the following ways: by publication of an important book or article; by the furtherance of the teaching of the history of chemistry; by significant contributions to the bibliography of the history of chemistry; or by meritorious services over a long period of time which have resulted in the advancement of the history of chemistry.

Medical Library Association

The Medical Library Association will hold its 55th annual meeting from June 18 to 22 at the Hotel Statler in Los Angeles, Calif. The program will include a tour of the new UCLA Medical Center in addition to addresses by Dr. Charles W. Schilling, U. S. Naval Academy; Dr. W. L. Halverson, Professor of Public Health, U C L A; Dr. Cyril B. Courville, Professor of Neurology, College of Medical Evangelists; Dr. Stafford L. Warren, Dean of the U C L A Medical School; and others prominent in the field. Further information can be obtained from Mrs. Ella Crandall, Librarian, Los Angeles County General Hospital, 1200 N. State St., Los Angeles 33, Calif.

National Science Foundation

A limited program of support of basic research in the history, philosophy, and sociology of science has been initiated and a number of grants have been made as part of the program. The members of the Foundation's Advisory Panel for the History, Philosophy, and Sociology of Science are: I. Bernard Cohen, Harvard University; Philipp G. Frank, American Academy of Arts and Sciences; John F. Fulton, Yale University; R. B. Lindsay, Brown University; Richard H. Shryock, The Johns Hopkins University; Joseph J. Spengler, Duke University. Research proposals in the history, philosophy, and sociology of science will be received by the Foundation at any time. Further information regarding the submission of proposals may be obtained from the National Science Foundation, Washington 25, D. C.

University of Kansas

Dr. Lloyd G. Stevenson of Montreal will deliver the Seventh Series of the Logan Clendening Lectures on the History and Philosophy of Medicine. The tentative titles of the lectures are: "Poison, Infection and Contagion," and "The Story of Curare." One lecture will be given in Lawrence on April 24, and the other in Kansas City on April 25, 1956.

Yale University School of Medicine

The Samuel C. Harvey Lecture, "The Development of the Residency System of Surgical Training" is to be given by Dr. Warfield M. Firor on January 13. The other lectures in the series will be: "Brief Review of the History of Neurological Surgery," Ernest Sachs (Jan. 20); "History of Otolaryngology," John A. Kirchner (Jan. 27); "Ancient Concepts of the Diagnosis and Treatment of Bladder Calculus," Clyde L. Deming (Feb. 3). (*J. A. M. A.*, 160, Jan. 7, 1956, p. 61.)

Death

Dr. Reuben Friedman, Clinical Professor of Dermatology at Temple University, Philadelphia, died on February 4, 1956, at Temple University Hospital. Dr. Friedman, a member of the American Association of the History of Medicine of many years standing, is widely known as the author of historical works on dermatological subjects, especially scabies.

PROGRAMS OF MEETINGS

Beaumont Medical Club, New Haven, Conn.

October 30, 1955: John F. Fulton, "Gastric Physiology before Beaumont" (One hundredth meeting of the Club).

Benjamin Waterhouse Medical History Society, Boston

January 30, 1956: Mark Ozer, "Vivisection Controversy in England."

February 27: Hyman Morrison, "Great Medical Classics."

Society of Medical History of Chicago

December 14, 1955: Lester S. King, "Similia Similibus"; I. Davidsohn, "Medical Caricatures—A Mirror of Medical History."

January 18, 1956: Eugene M. K. Geiling, "John Jacob Abel, Founder of American Pharmacology"; Leo M. Zimmerman, "Iconography of Medical Interest in Painting and Sculpture."

NEWS FROM ABROAD

Brazil

The Instituto Brasileiro de História da Medicina is discussing preparations for "Medical History Day," November 30, 1956, on which day there is to be inaugurated in Rio de Janeiro the First Pan-American Congress of the History of Medicine, to be held jointly with the Third Brazilian Congress of the History of Medicine.

Scotland

The Scottish Society of the History of Medicine has published its "Report of Proceedings" for the session 1954-55. "The meetings have been well attended, the papers attractive, and the discussions animated and fruitful. The membership now stands at one hundred and fifteen." Summaries of the papers and an appendix, listing the contents of the Armstrong Museum at Newcastleton, Roxburghshire, are included in the Report. Mr. A. L. Goodall was elected president of the Society which Dr. H. P. Tait (26 Cluny Drive, Edinburgh 10) serves as honorary secretary.

BOOK REVIEWS

G. LAFEUILLE. *Les Amphorismes Ypocras de Martin de Saint-Gille, 1362-1365.* Cambridge, Mass.: Harvard University Press, 1954. 165 pp. Ill. $5.50.

This carefully prepared volume offers the reader (1) an edition of a thirteenth century text of the *Aphorisms* of Hippocrates derived from the earliest known commentary in French; (2) a description, with a few selected extracts, of this commentary, by Martin de Saint-Gille, " es ars et en médecine maistre," attached indirectly at the time of writing (1362-65) to the Papal court at Avignon; and finally, material on the commentator and the historical background of his book, partly descriptive, derived from secondary sources such as Sarton, partly analytical of the vocabulary and syntax of the text itself. The modern editor brings the training of a linguist and philologist to the presentation of a forgotten work which has some value in illustrating the history of medicine in medieval France.

Les Amphorismes Ypocras as left us by Martin de Saint-Gille are far from aphoristic; the words and phrases of Hippocrates are dispersed and almost lost in extended explanatory commentary, derived in part from Galen, in part from recent thinking, some of it Arab. The modern editor of such a text must face a difficult problem of presentation, choosing between the reproduction of the whole text and printing a convenient selection and abstract of the parts of the total book most worth reading today. Mlle Lafeuille has taken the second alternative, in an extreme form; she reconstructs each Hippocratic aphorism by selecting the appropriate French words from the long medieval phrases of the commentary. This patient disentangling of a Greek text notable for its succinctness from Saint-Gille's incredibly turgid prose gives us a new *Ypocras* indeed, an Hippocrates that neither ancient Greece nor 14th-century Avignon would recognize, neither truly Greek nor yet medieval French.

It is a little difficult to see just what purpose this presentation serves. We follow the extremely careful unravelling of the Hippocratic words of Aphorism III, 26, (p. 70) from the embarrassed paragraphs of the full text transcribed as a sample in the Appendix, p. 117, and find that little is added to our knowledge of the original and that even less attention is paid to the ideas and manner of Martin de Saint-Gille. The problem that faces the editor of any humanistic commentary on ancient texts has been resolved for the purposes of immediate publication; the solution selected leaves still further problems unsolved as the reader attempts to discover the bearing and intent of the tremendous effort of the humanist commentator. The future historian of French medicine will necessarily turn from this mostly philological study to the original full text which alone can give him understanding.

There is no doubt that Mlle Lafeuille is keenly aware of the problems involved. Her Introduction, pp. 11-52, describes the author, the circumstances which governed composition of the work, its debt to Guy de Chauliac, the nature of the copy from which the text derives, its princely owner, John Duke of Bedford, Regent in France in 1429, and the language in which the commentary was written. Appendices contain an analysis of and extracts from the material preliminary to the

elaborated Aphorisms, the text of three of Martin's amplifications, as well as remarks on the four plates reproducing pages of the illuminated manuscript.

The copyist, maistre Jehan Tourtier, writes that he began "L'an de grace mil CCCC vingt neuf" and finished his task "le mercredi premier jour de fevrier mil CCCCXXIX." Mlle Lafeuille takes this to mean that the whole elaborate volume, with its illuminations and text, was completed within the month of January, 1429. If, as seems more probable, the year began with April, in accordance with the calendar generally used throughout the middle ages, then the speed seems less notable.

Because of her philological competence, the editor of this text has emphasized linguistic and textual problems rather than those that occur to the historian of medicine. In some respects this is eminently desirable: we have a well-studied text, accompanied by a careful analysis of its author's use of a Latin version, perhaps that of Nicolaus Rheginus, in comparison with a Greek original. There is also a vocabulary of the learned and specialized terms, and a glossary of about 700 words. Not the least interesting item in this well-filled volume is a preface by George Sarton, who traces briefly the course of Hippocratic texts in France from the Renaissance translation by Jehan Brèche, down to the standard version by Littré, Paris 1844.

HARCOURT BROWN

GEORGE SARTON. *Horus. A Guide to the History of Science.* Waltham, Mass.: The Chronica Botanica Co.; New York City: Stechert-Hafner, Inc., 1952. xiii + 316 pp. Ill. $7.50.

The present book is divided into two parts, of which the second is entitled "A First Guide for the Study of the History of Science." To begin with this second part: it will prove a very useful bibliographical tool for a great many people. Of its four main divisions, the first two are parallel ones devoted to History and Science, respectively. The third division, "History of Science," dedicated to the subject *sensu strictiori*, is naturally the longest. Apart from chapters on general reference books and handbooks and on scientific instruments, it views the subject from the aspects of the history of science in special countries and special cultural groups; it includes the history of special sciences, and a listing of journals and serials concerning the history and philosophy of science. For the last named chapter as well as several others, Professor Sarton acknowledges the collaboration of Dr. Claudius F. Mayer of Washington D. C. In the last division, "Organization of the Study and Teaching of the History of Science," the reader will find information not only on national and international organizations but also institutes, museums, international congresses, and prizes. Throughout this whole part of the book, bibliographical orientation is the main aim. The author's own library served as the basis for the listing, and critical introductions range from short prefaces (and even articles, e. g. ch. 23) to more or less extended comments which, however, have been omitted in some sections (e. g. history of special sciences) for reasons set forth on p. 70.

In spite of the fact that this is a bibliographical tool, the "Guide" is so strongly influenced by, if not to say imbued with, Professor Sarton's concept of

the nature and aim of the history of science that those using it are almost bound to ask for an exposition of his beliefs. They will find it explicitly in the first part which combines three "Introductory Essays" by George Sarton under the title of "Science and Tradition." This title is also the heading of the first essay, the other two dealing with "The tradition of ancient and medieval science" and "Is it possible to teach the history of science?"

Our contention that the book as a whole is strongly influenced by Professor Sarton's outlook will probably be shared by any reader who asks himself: what does the author mean by the history of science? This question is bound to arise when one turns to the chapter on the history of the special sciences and finds listed there 41 topics, beginning with "Logic," ending with "Prehistoric Archaeology" and including such items as mathematics, physics, medicine on the one hand, and philosophy, education, sociology on the other. What is supposed to hold all these together? The accent seems to lie on "natural science" without, however, any rigid delimitation. This is likely to cause some confusion, especially since in his *Introduction to the History of Science* Professor Sarton has gone even further, including e. g. historiography and philology. At any rate, according to Sarton, the history of science is not the sum of the various sciences. His concept of science can perhaps be paraphrased as: man's attempt at gaining positive knowledge. Thus understood, science is one of man's noblest pursuits which, at the same time, unites mankind. The history of science, which traces this pursuit and makes us conscious of it, is entrusted with a humanizing effect and a cultural mission. Sarton goes even so far as to state that the teacher of the history of science must teach "the unity not only of science but also of mankind" (p. 64). Moreover:

> Within his own immediate milieu, it is his duty to provide links between a whole gamut of leaders, from the technical barbarians at the extreme left to the well-meaning but ignorant technical barbarians at the extreme right. He should help to integrate our spiritual life, on the one hand, by explaining scientific facts and points of view and methods to the humanists, politicians, administrators, and on the other hand, by humanizing the men of science and engineers and reminding them always of the traditions without which our lives, however efficient, remain ugly and meaningless.

The history of science thus emerges as a subject which is at once a specialty requiring the knowledge and training of a specialist as well as a mission requiring faith and zeal on the part of its professors and teachers. Nobody will doubt that George Sarton combines the learning and enthusiasm of the historian of science as defined by him. Yet it is difficult to suppress some doubts as to the inherent connection of the history of science as a specialty with the philosophical and moral outlook represented by Sarton. Much as I agree with his distinction between the true man of science and the technocrat (see pp. 7 ff.), I must regretfully confess that I can envisage a technocrat in the garb of a well-trained historian of science. The danger may become overt once it is understood that a training in the subject is a useful preparation for certain administrative careers.

All this leads to two related thoughts. It might have been advisable to define the realm of the history of science more clearly. If it is primarily the history of natural science, that is one thing; if it is the history of *Wissenschaft* at large, that is quite another. Wavering between these extremes is bound to cause un-

certainty on the part of historians of science and uneasiness among others. Moreover, regardless of our personal expectations and hopes, the possibility had better be admitted that no course in any science or branch of learning *per se* will have a humanizing effect and that it may be too much to require inborn qualities in a historian of science which are not required in others.

Sarton's essays will not leave their readers indifferent. They will enchant them or provoke them; whichever it may be, they will rouse their interest in the history of science. The following bibliographic part will then channel that interest into modes of work. *Horus* is to be highly recommended for beginners and adepts alike, and especially to medical historians who wish to be in contact with a neighboring field.

OWSEI TEMKIN

THE BULLETIN RECENTLY RECEIVED *

Horacia Abascal. *Reseña Historica y Sinonimia de la Frambuesa y de la Pelagra.* La Habana: Ministerio de Salubridad y Asistencia Social, 1955. 35 pp. Ill.

Ricardo Archila. *Bibliografia Medica Venezolana.* 2nd edition. Caracas: Editorial Bellas Artes, C. A., 1955. xxiii + 1041 pp.

Paul Diepgen. *Geschichte der Medizin.* II. Band, 2. Hälfte. Berlin: Walter de Gruyter & Co., 1955. xii + 336 pp. Ill. D. M. 34.

D. Antonio Gallart-Esquerdo. *Historia de la Gastroenterologia Española.* Discurso Leido en la Real Academia de Medicina de Barcelona. Barcelona, 1955. 146 pp. Ill.

Journal of the Royal College of Surgeons of Edinburgh. Vol. 1, No. 1, September 1955. Published quarterly. Annual subscription 21 shillings.

Dieter Klebe and Hans Schadewaldt. *Gefässe zur Kinderernährung im Wandel der Zeit.* Frankfurt am Main: Schirmer & Mahlau, 1955. 53 pp. Ill.

Medical Department, United States Army. *Preventive Medicine in World War II*: Volume III: Personal Health Measures and Immunization. Ed. John Boyd Coates, Jr. and Ebbe Curtis Hoff. Washington, D. C.: Office of the Surgeon General, Department of the Army, 1955. xiv + 294 pp. Ill.

Medical Department, United States Army. *Surgery in World War II: Vascular Surgery.* Ed. Daniel C. Elkin and Michael E. DeBakey. Washington,, D. C.: Office of the Surgeon General, Department of the Army, 1955. ix + 465 pp. Ill.

Thomas Phaire. *The Boke of Chyldren.* Edinburgh and London: E. & S. Livingstone (Baltimore: Williams & Wilkins Co.), 1955. 76 pp. Ill. $2.75.

Soranus' Gynecology. Translated with an Introduction by Owsei Temkin, with the assistance of Nicholson J. Eastman, Ludwig Edelstein, and Alan F. Guttmacher. Baltimore: The Johns Hopkins Press, 1956. xliv + 258 pp. $5.00. Ill.

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* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section.

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